# ARTICLES OF ORGANIZATION OF WWD LIMITED LIABILITY COMPANY

921108605 \$50.00 S0S 11-12-92 08:30

The undersigned natural person of the age of eighteen years or more, acting as organizer of a limited liability company under the Colorado Limited Liability Company Act, adopts the following Articles of Organization for such limited liability company.

FIRST: The name of the limited liability company is:

WWD Limited Liability Company

SECOND: The period of duration will be 30 years.

THIRD: The limited liability company is organized for any legal and lawful purpose pursuant to the Colorado Limited Liability Company Act.

FOURTH: The address of the initial registered office of the limited liability company is 1960 Industrial Circle, Longmont, Colorado 80501, and the name of its initial registered agent at such address is Kennneth E. Pratt.

FIFTH: The address of the principal place of business is 1960 Industrial Circle, Longmont, Colorado.

SIXTH: The name and address of the person who shall serve as manager until the first annual meeting of members or until his successor is elected and shall qualify are:

Kenneth E. Pratt 1960 Industrial Circle Longmont, CO 80501

SEVENTH: The name and address of the organizer is:

Kenneth E. Pratt 1960 Industrial Circle Longmont, CO 80501

KENNETH E. PRATT, Organizer

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COMP. CHID. MRA



12091 11/4/92 DGH



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## **Summary**

Details				
Name	WWD LIMITED LIABILITY COMPANY			
Status	Good Standing Formation date 11/12/1992			
ID number	19921108605	Form	Limited Liability Company	
Periodic report month	November	Jurisdiction	Colorado	
Principal office street address	105 S. Sunset St, Suite H, P. O. Box 1937, LONGMONT, CO 80502, United States			
Principal office mailing address	n/a			

Registered Agent	
Name	SUSAN M. PRATT
Street address	105 S. Sunset St, Suite H, LONGMONT, CO 80501, United States
Mailing address	P.O. Box 1937, LONGMONT, CO 80502-1937, United States

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Colorado Secretary of State

Date and Time: 10/24/2017 01:25 PM

ID Number: 19921108605

Document number: 20171799828

Amount Paid: \$10.00

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## **Periodic Report**

filed pursuant to §7-90-301, et seq. and §7-90-501 of the Colorado Revised Statutes (C.R.S)

ID number:	19921108605		
Entity name:	WWD LIMITED LIABI	LITY COMP	ANY
Jurisdiction under the law of which the entity was formed or registered:	Colorado		
1. Principal office street address:	105 S. Sunset St, Suit		
	P. O. Box 1937	et name and numbe	er)
	LONGMONT	CO	80502
	(City)	(State)	(Postal/Zip Code) States
	(Province – if applicable)	(Country –	
2. Principal office mailing address:			
(if different from above)	(Street name and nu	mber or Post Office	e Box information)
	(City)	(State)	(Postal/Zip Code)
	(Province – if applicable)	(Country -	- if not US)
3. Registered agent name: (if an individual)	PRATT	SUSAN	M.
	(Last)	(First)	(Middle) (Suffix)
or (if a business organization)			
4. The person identified above as registere	d agent has consented to be	eing so appoin	ted.
5. Registered agent street address:	105 S. Sunset St, Sui	te H	
5. Registered agent street address.		et name and numbe	er)
	LONGMONT		80501
	(City)	<u>CO</u> (State)	(Postal/Zip Code)
6. Registered agent mailing address:	P.O. Box 1937		
(if different from above)	(Street name and nu	mber or Post Office	e Box information)
	LONGMONT	СО	80502-1937
	(City)	(State) United St	(Postal/Zip Code)
	(Province – if applicable)	(Country – if	

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7. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

be delivered for filing:	Kling	Wendy	
	(Last)	(First)	(Middle) (Suffix
	P. O. Box 1937		
	(Street name and	l number or Post Office Bo	x information)
	Longmont	CO 8050	2
	(City)	United States	(Postal/Zip Code)
	(Province – if applicable)	(Country – if not US	<del>_</del> )
(The document need not state the true nam	ne and address of more than one individu	al. However, if you wish t	o state the name and addres.
of any additional individuals causing the name and address of such individuals.)	document to be delivered for filing, mark	this box and include	an attachment stating the

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## **Summary**

Details					
Name	Stratus Redtail Ranch, LLC				
Status	Good Standing	Good Standing Formation date 04/08/2015			
ID number	20151244823	Form	Limited Liability Company		
Periodic report month	April	Jurisdiction	Colorado		
Principal office street address	1842 Montane Dr, Golden, CO 80401, United States				
Principal office mailing address	n/a				

Registered Agent	
Name	Richard Dean
Street address	1842 Montane Dr, Golden, CO 80401, United States
Mailing address	n/a

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## **History and Documents**

Name: Stratus Redtail Ranch, LLC

ID number: 20151244823

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#### Found 8 matching record(s). Viewing page 1 of 1.

# Event	Date Filed	<u>Date</u> Posted	Effective Date	Document #	Comment
1 Articles of Organization	04/08/2015	04/08/2015	04/08/2015 10:52 AM	20151244823	
2 Periodic Report due	03/23/2016	03/23/2016	03/23/2016 02:09 AM		Periodic report due by: 06/30/2016
3 Periodic Report due in one week	06/24/2016	06/24/2016	06/24/2016 01:43 AM		Periodic report due by: 06/30/2016
4 Report	06/24/2016	06/24/2016	06/24/2016 08:13 AM	20161429285	
5 Periodic Report due	03/23/2017	03/23/2017	03/23/2017 02:08 AM		Periodic report due by: 06/30/2017
6 Periodic Report due in one week	06/24/2017	06/24/2017	06/24/2017 01:43 AM		Periodic report due by: 06/30/2017
7 Report	06/24/2017	06/24/2017	06/24/2017 09:06 AM	20171483578	Change of Registered Agent / Change of Registered Agent Address / Change of Entity Address
8 Periodic Report due	03/23/2018	03/23/2018	03/23/2018 02:27 AM		Periodic report due by: 06/30/2018

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Date and Time: 06/24/2017 09:06 AM

ID Number: 20151244823

Document number: 20171483578

Amount Paid: \$10.00

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### **Periodic Report**

filed pursuant to §7-90-301, et seq. and §7-90-501 of the Colorado Revised Statutes (C.R.S)

ID number:	20151244823					
Entity name:	Stratus Redtail Rancl	Stratus Redtail Ranch, LLC				
Jurisdiction under the law of which the entity was formed or registered:	Colorado					
1. Principal office street address:	1842 Montane Dr	r)				
	Golden	СО	80401			
	(City)	(State) United	(Postal/Zip Code)			
	(Province – if applicable)	(Country –				
2. Principal office mailing address:		D . 000	P. i. C. vi.			
(if different from above)	(Street name and ni	umber or Post Office	Box information)			
	(City)	(State)	(Postal/Zip Code)			
	(Province – if applicable)	(Country –	if not US)			
3. Registered agent name: (if an individual)	Dean	Richard				
	(Last)	(First)	(Middle) (Suffix,			
or (if a business organization)						
4. The person identified above as registere	_	peing so appoint	ted.			
5. Registered agent street address:	1842 Montane Dr (Street name and number)					
	0.11		00404			
	Golden (City)	<u>CO</u> (State)	80401 (Postal/Zip Code)			
6. Registered agent mailing address: (if different from above)	(Street name and n	umber or Post Office	Box information)			
	(City)	(State)	(Postal/Zip Code)			
	(Province – if applicable)	(Country – if i	not US)			

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7. Name(s) and address(es) of the individual(s) causing the document to be delivered for filing:

be delivered for filing:	Dean	Richard	
C	(Last)	(First)	(Middle) (Suffix)
	1842 Montane Dr		
	(Street name and	d number or Post Office Box	information)
	Golden	CO 80401	
	(City)	United States	(Postal/Zip Code)
	(Province – if applicable)	(Country – if not US)	
(The document need not state the true no	ame and address of more than one individu	ual. However, if you wish to	state the name and address
of any additional individuals causing th name and address of such individuals.)	e document to be delivered for filing, mark	this box and include a	in attachment stating the

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Colorado Secretary of State

Date and Time: 04/08/2015 10:52 AM

ID Number: 20151244823

Document number: 20151244823

Amount Paid: \$50.00

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### **Articles of Organization**

filed pursuant to § 7-80-203 and § 7-80-204 of the Colorado Revised Statutes (C.R.S.)

1. The domestic entity name of the limited liability company is

### Stratus Redtail Ranch, LLC

(The name of a limited liability company must contain the term or abbreviation "limited liability company", "ltd. liability company", "limited liability co.", "ltd. liability co.", "limited", "l.l.c.", "llc", or "ltd.". See §7-90-601, C.R.S.)

(Caution: The use of certain terms or abbreviations are restricted by law. Read instructions for more information.)

2. The principal office address of the limited liability company's initial principal office is

Street address 948 Buffalo Ridge Road				
	(Street	number and name)	)	
	Castle Pines	СО	80108	
	(City)	United S	(ZIP/Postal Code)	
	$(Province-if\ applicable)$	(Countr	ry)	
Mailing address				
(leave blank if same as street address)	(Street number and no	ame or Post Office	Box information)	
	(City)	(State)	(ZIP/Postal Code)	
	(Province – if applicable)	(Country	•	
e registered agent name and register ent are  Name	ed agent address of the filling	ed naomity con	npany's initial registered	
ent are	(Last)	(First)	(Middle) (Suff	
Name (if an individual) or (if an entity)	(Last) The Richard & Reagan	(First)	(Middle) (Suff	
Name (if an individual) or	(Last)  The Richard & Reagan dual and an entity name.)	(First) n Dean Famil	(Middle) (Suff	
Name (if an individual) or (if an entity)	(Last) The Richard & Reagar dual and an entity name.) 948 Buffalo Ridge Ro	(First) n Dean Famil	(Middle) (Suff	
Name (if an individual)  or (if an entity) (Caution: Do not provide both an individual)	(Last) The Richard & Reagar dual and an entity name.) 948 Buffalo Ridge Ro	(First) n Dean Famil	(Middle) (Suff	
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Name (if an individual)  or (if an entity) (Caution: Do not provide both an individual)	(Last)  The Richard & Reagandual and an entity name.)  948 Buffalo Ridge Ro	(First)  Dean Famil  Dad  number and name)	(Middle) (Suff	
Name (if an individual)  or (if an entity) (Caution: Do not provide both an individual)	(Last)  The Richard & Reagan dual and an entity name.)  948 Buffalo Ridge Ro	(First)  n Dean Famil  pad  number and name)  CO (State)	(Middle) (Suff	

		CO		
	(City)	(State)	(ZIP Code)	
(The following statement is adopted by n  The person appointed as re	narking the box.) egistered agent has consented to b	eing so appointed.		
4. The true name and mailing addr	ress of the person forming the lim	ited liability comp	oany are	
Name (if an individual)	(Last)	(First)	(Middle)	(Suffix
or	(,	( )	(,	(4.33)
(if an entity)	The Richard & Reag	an Dean Family	/ Partnership,	LLLP
(Caution: Do not provide both a	n individual and an entity name.)			
Mailing address	948 Buffalo Ridge I	Road		
· ·	(Street number	and name or Post Office	e Box information)	
	Castle Pines	СО	80108	
	(City)	United State)	(ZIP/Postal C	ode)
	(Province – if applicable)	(Country)	<u>aics</u> .	
	apany has one or more additional and mailing address of each such liability company is vested in			•
5. (The following statement is adopted by mo	arking the box.) or of the limited liability company	<i>7</i> .		
7. (If the following statement applies, adopt  This document contains add	the statement by marking the box and including litional information as provided b			
3. (Caution: Leave blank if the docume significant legal consequences. Read	nt does not have a delayed effective da l instructions before entering a date.)	te. Stating a delayed	effective date has	
	the statement by entering a date and, if applicable, time of this docume	ent is/are		
		(mm/c	ld/yyyy hour:minute d	ım/pm)

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9. The true name and mailing address of the individual causing the document to be delivered for filing are

	Dean	Richard		
	948 Buffalo Ridge Road	(First)	(Middle)	(Suffix)
	(Street number o	nd name or Post Off	ice Box information)	
	Castle Pines	СО	80108	
	(City)	(State) United St	(ZIP/Postal Code)	)
	(Province – if applicable)	(Country	y)	
(If the following statement applies, adopt the This document contains the true n	ame and mailing address o			
causing the document to be delive	ered for filing.			

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# APPLICATION FOR REGISTRATION OF TRADE -MARK

TO THE HONORABLE THE SECRETARY OF STATE OF THE STATE OF COLORADO:

INTERNATIONAL BUS	SINESS MACHINES CORPORATION (New York Corp.)
	Name of Owner
Whose principal place of business is	Old Orchard Road
_	Street No.
Armonk	New York 10504
City	State provisions of Article I, Chapter 141, Colorado Revised Statutes,
	<del>-</del>
1953, has adopted and is using in the	State of Colorado the Germina mark <sup>2</sup> IBM
in Classification <sup>3</sup> No, for <sup>4</sup>	omputer programs; information handling ystems, components and supplies there as shown for the components and supplies there as shown for the components and supplies there are shown for the components and supplies the components are shown for the components and supplies the components and supplies the components are shown for the components and supplies the components are shown for the components
by the accompanying specimens or fac	esimiles, the said mark being used in connection with the goods
or services in the following manner6	by printing or embossing it on labels,
	<b>Q</b>
	sed by the applicant, or his predecessor in the same business, by
prior to 1950 and fi	rst used in the State of Colorado of prior to 19.50,
and has not been abandoned.	ist used in the state of colorado parintal desired
STATE OF NEW YORK	
STATE OF NEW YORK  COUNTY OF WESTCHESTER	3s.
	being duly sworn (or affirmed), deposes and
that he verily believes that the application other person has the right to use such form thereof or in such near resemblat therefor; that the statements set forth truly represent the mark as used; and agent for service of process in any account of the service of the service of process in any account of the service of the servi	International Business Machines Corporation; at is the owner of the trade-mark or service-mark and that no a trade-mark or service-mark in this State, either in the identical acceptance thereto as might be calculated to deceive or be mistaken a above are true; that the accompanying specimens or facsimiles a that the applicant hereby appoints the Secretary of State as a tion relating to the registration which may be issued, if the dent or foreign corporation not licensed to do business in this INTERNATIONAL BUSINESS MACHINES CORPORATION
	By8 Stade
	J. H. GRADY, Secretary, the office of the applicant corporation.
Subscribed and sworn to before me th	
My commission expires March 30	1975
My commission expires	Vira Quiarol
Submit 1 copy and 3 labels.	No. 40-2543150, Qualified in Putnam Co. Notary Public Notary Public, State of New York Commission Expires March 30, 191 COMPUTER UPDATE COMPLET erts, filed in New York & Westchester, Counting

Filing Clerk COX Fee \$10.00	FILED in the office of the Secretary of State, of the State of Colorado, on the 12th day of October A.D. 19. 73	RECORDED  ROLL 219 PAGE - 31	(Please do not	+ t	Application for Registration of Trade -Mark Service -Mark
T.	St 01 St 01	Fee \$1.00  Date sent 0CT 1 2 19/3		Old Orchard Road Armonk, New York 10504	Certificate sent to  Joseph P. Thorne, Atty.

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## **Summary**

Details					
Name	INTERNATIONAL BUSINESS MACHINES CORPORATION				
Status	Good Standing Formation date 12/18/1933				
ID number	19871008632	Form	Foreign Corporation		
Periodic report month	December	Jurisdiction	New York		
Principal office street address	NEW ORCHARD ROAD, C/O IBM CORPORATION, ARMONK, NY 10504, United States				
Principal office mailing address	3039 E Cornwallis Road, C/O INCOME TAX DEPT, Research Triangle Park, NC 27709, United States				

Registered Agent	
Name	The Corporation Company
Street address	7700 E Arapahoe Rd Ste 220, Centennial, CO 80112-1268, United States
Mailing address	n/a

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05/30/2018 17:23

Name: INTERNATIONAL BUSINESS MACHINES CORPORATION

**ID number**: 19871008632

## Found 67 matching record(s). Viewing page 1 of 1.

	Found	i or illatel	illing reco	u(s). Viewing pag	ge i oi i.	
#	Event	Date Filed	Date Posted	Effective Date	Document # (click to view)	Comment
1	Application for Authority	12/18/1933	12/18/1933	12/18/1933 12:00 AM	19871008632	INTERNATIONAL BUSINESS MACHINES CORPORATION
2	Amendment	08/03/1982	08/03/1982	08/03/1982 12:00 AM	19871486914	
3	Amendment	08/03/1982	08/03/1982	08/03/1982 12:00 AM	19871486915	
4	Amendment	08/31/1987	08/31/1987	08/31/1987 12:00 AM	19871744609	CHANGE RORA
5	Surviving Entity In Merger	03/24/1988	03/24/1988	03/24/1988 12:00 AM	19881021149	ROLM CORPORATION
6	Report	12/13/1990	12/13/1990	12/13/1990 12:00 AM	19851021429	CR85 - 05/02/85 - 8521429
7	Report Printed	11/20/1991	11/20/1991	11/20/1991 12:00 AM		CR - 12/01/91 - 02/29/92
8	Report	12/19/1992	12/19/1992	12/19/1992 12:00 AM	19871034228	CR87 - 07/20/87 - 8734228
9	Amendment	09/01/1993	09/01/1993	09/01/1993 12:00 AM	19931108152	CHANGE RORA
	Report Printed			11/15/1993 12:00 AM		CR - 12/01/93 - 02/28/94
	Report	02/22/1994	02/22/1994	02/22/1994 12:00 AM	19941021103	CORP REPORT
12	Report	12/16/1994	12/16/1994	12/16/1994 12:00 AM	19891061037	CR89 - 05/01/89 - 891061037
13	Report Printed	11/16/1995	11/16/1995	11/16/1995 12:00 AM		CR - 12/01/95 - 02/29/96
14	Report Printed			03/21/1996 12:00 AM		CR - 03/31/96 - RA 05/31/96
	Report			03/21/1996 12:00 AM		
16	Report	12/14/1996	12/14/1996	12/14/1996 12:00 AM	19921030689	CR91 - 02/29/92 - 921030689
17	Report Printed	11/18/1997	11/18/1997	11/18/1997 12:00 AM		CR - 12/01/1997 - 02/28/1998
18	Report	02/24/1998	02/24/1998	02/24/1998 12:00 AM	19981035972	PERIODIC REPORT
19	Report Printed	11/16/1999	11/16/1999	11/16/1999 12:00 AM		CR - 12/01/1999 - 02/29/2000
20	Report	02/09/2000	02/09/2000	02/09/2000 12:00 AM	20001028135	PERIODIC REPORT
21	Surviving Entity In Merger	03/28/2000	03/28/2000	03/28/2000 12:00 AM	20001063228	TRANSARC CORPORATION (QUAL- NON SURV)
22	Surviving Entity In Merger	02/28/2001	02/28/2001	02/28/2001 12:00 AM	20011043241	CATAPULT, INC. (QUAL NONSURV)
23	Surviving Entity In Merger	03/26/2001	03/26/2001	03/26/2001 12:00 AM	20011062109	ARAGON CONSULTING GROUP, INC. (NOTQUALNONSURVIVOR)
24	Surviving Entity In Merger	08/01/2001	08/01/2001	08/01/2001 12:00 AM	20011151566	SEQUENT COMPUTER SYSTEMS, INC.(QUAL- NON SURV)
25	Report Printed	11/20/2001	11/20/2001	11/20/2001 12:00 AM		PR - 12/01/2001 - 02/28/2002
26	Report Printed	03/22/2002	03/22/2002	03/22/2002 12:00 AM		PR - 03/31/2002 - RA 05/31/2002
27	Report	04/19/2002	04/19/2002	04/19/2002 12:00 AM	20021102070	2001 PERIODIC REPORT
28	Report Printed	11/14/2002	11/14/2002	11/14/2002 12:00 AM		PR - 12/01/2002 - 02/28/2003
29	Report	01/28/2003	01/28/2003	01/28/2003 12:00 AM	20031031183	PERIODIC REPORT
30	Report Printed	11/18/2003	11/18/2003	11/18/2003 12:00 AM		PR - 12/01/2003 -

SO/2	2018		Colorado Se	ecretary of State - History	and Documents	
						02/29/2004
	31 Report Printed	03/23/2004	03/23/2004	03/23/2004 12:00 AM		PR - 03/31/2004 - RA 05/31/2004
	32 Report	03/25/2004	03/25/2004	03/25/2004 12:00 AM	20041110904	PERIODIC REPORT
	33 postcard notification printed 11/20/2004 to be mailed 12/01/2004	11/20/2004	11/20/2004	11/20/2004 02:18 AM		annual report due: 02/28/2005
	34 Report	02/08/2005	02/08/2005	02/08/2005 09:54 AM	20051058675	
	<b>35</b> postcard notification printed 11/21/2005 to be mailed 12/01/2005	11/21/2005	11/21/2005	11/21/2005 02:37 AM		annual report due: 02/28/2006
	<b>36</b> Change in Status	03/01/2006	03/01/2006	03/01/2006 01:32 AM		Failure to file annual report
	37 postcard notification printed 03/22/2006 to be mailed 04/01/2006	03/22/2006	03/22/2006	03/22/2006 01:46 AM		annual report due: 2006-05-31
	38 Report	04/25/2006	04/25/2006	04/25/2006 02:24 PM	20061172853	
	39 Filing Officer Correction	11/17/2006	11/17/2006	11/17/2006 06:32 PM		Registered agent's street address augmented to include the suite number
	<b>40</b> postcard notification printed 11/21/2006 to be mailed 12/01/2006	11/21/2006	11/21/2006	11/21/2006 02:43 AM		annual report due: 02/28/2007
	41 Report	02/12/2007	02/12/2007	02/12/2007 09:57 AM	20071072519	
	<b>42</b> postcard notification printed 11/23/2007 to be mailed 12/01/2007	11/23/2007	11/23/2007	11/23/2007 03:43 AM		annual report due: 02/28/2008
	43 Report	02/14/2008	02/14/2008	02/14/2008 07:59 AM	20081091348	
	<b>44</b> postcard notification printed 11/23/2008 to be mailed 12/01/2008	11/23/2008	11/23/2008	11/23/2008 03:11 AM		annual report due: 02/28/2009
	45 Report	02/09/2009	02/09/2009	02/09/2009 10:00 AM	20091084588	
	<b>46</b> postcard notification printed 11/22/2009 to be mailed 12/01/2009	11/22/2009	11/22/2009	11/22/2009 04:03 AM		annual report due: 02/28/2010
	47 Report	02/09/2010	02/09/2010	02/09/2010 09:22 AM	20101083614	
	<b>48</b> postcard notification printed 11/23/2010 to be mailed 12/01/2010	11/23/2010	11/23/2010	11/23/2010 04:12 AM		periodic report due: 02/28/2011
	49 Report	02/04/2011	02/04/2011	02/04/2011 07:18 AM	20111074761	
	50 postcard notification printed 11/23/2011 to be mailed 12/01/2011	11/23/2011	11/23/2011	11/23/2011 02:27 AM		periodic report due: 02/29/2012
	51 Report	02/20/2012	02/20/2012	02/20/2012 12:10 PM	20121104603	
	52 Periodic Report due	11/23/2012	11/23/2012	11/23/2012 02:34 AM		Periodic report due by: 02/28/2013
	53 Report	01/17/2013	01/17/2013	01/17/2013 08:17 AM	20131033200	
	54 Periodic Report due	11/25/2013	11/25/2013	11/25/2013 01:43 PM		Periodic report due by: 02/28/2014
	55 Register a Trademark	01/08/2014	01/08/2014	01/08/2014 10:10 AM	20141016389	Trademark registered to entity.
	<b>56</b> Register a Trademark	01/08/2014	01/08/2014	01/08/2014 10:20 AM	20141016437	Trademark registered to entity.
	<b>57</b> Register a Trademark	01/08/2014	01/08/2014	01/08/2014 10:25 AM	20141016459	Trademark registered to entity.
	58 Report	02/10/2014	02/10/2014	02/10/2014 12:37 PM	20141092532	
	59 Periodic Report due	11/23/2014	11/23/2014	11/23/2014 03:35 AM		Periodic report due by: 02/28/2015
	60 Report	02/23/2015	02/23/2015	02/23/2015 12:36 PM	20151124795	Change of Entity Address
	61 Periodic Report due	11/23/2015	11/23/2015	11/23/2015 02:12 AM		Periodic report due by: 02/29/2016
	62 Report	01/27/2016	01/27/2016	01/27/2016 08:40 AM	20161067150	
	63 Statement of Change	09/16/2016	09/22/2016	09/16/2016 11:56 AM	20161624475	Registered agent address changed; Document lists all affected entities.
	64 Periodic Report due	11/23/2016	11/23/2016	11/23/2016 02:11 AM		Periodic report due by: 02/28/2017
	65 Report	02/16/2017	02/16/2017	02/16/2017 01:41 PM	20171124881	
	66 Periodic Report due			11/23/2017 02:10 AM		Periodic report due by: 02/28/2018
	67 Report	01/29/2018	01/29/2018	01/29/2018 08:25 AM	20181086457	
	,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					



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## **Summary**

Details					
Name	SANITATION ENGINEERING CORPORATION, Dissolved January 1, 1975				
Status	Administratively Dissolved Formation date 05/09/1966				
ID number	19661186693	Form	Corporation		
Periodic report month	May Jurisdiction Colorado				
Principal office street address	Garden Office Center, Broomfiled, CO 80020				
Principal office mailing address	n/a				

Registered Agent	
Name	R. Jerry Russell
Street address	Garden Office Center, Broomfield, CO 80020, United States
Mailing address	n/a

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## **History and Documents**

Name: SANITATION ENGINEERING CORPORATION,

Dissolved January 1, 1975

number: 19661186693

Print-friendly version

Found 3 matching record(s). Viewing page 1 of 1.

# Event Date Filed Posted Effective Date Occurrent # Comment # Comment

**1** Articles of Incorporation 05/09/1966 03/29/2018 05/09/1966 12:00 AM 19661186693 SANITATION ENGINEERING CORPORATION

Defunct & Inoperable

**2** Status Changed 10/15/1971 10/15/1971 10/15/1971 12:00 AM **3** Status Changed 01/01/1975 01/01/1975 01/01/1975 12:00 AM

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77: bc



Department of State INCORPORATION

## 1 Byron A. Anderson,

Secretary of State of the State of Colorada hereby certify that duplicate origina of Articles of Incorporation, duly signal and verified pursuant to the previsions so, the Colorado Corporation Act, have been received in this office and are found to conform to law,

Leverdingly the	undersigned, by virtue of the authority rested in me by law, here
by issues this Certific	ale of Incorporation of
	SANITATION ENGINEERING CORPORATION
and plankes hereto a	duplicate original of the Articles of Incorporation.
Lated this	NINTH

Byran a lige dense state state of STATE

#### ARTICLES OF INCORPORATION

OF

#### SANITATION ENGINEERING CORPORATION

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned natural persons of the age of twenty-one years or more, acting as incorporators of a corporation under the Colorado Corporation Act, adopt the following Articles of Incorporation for such corporation:

#### ARTICLE I.

The name of this corporation shall be: SANITATION ENGINEERING CORPORATION

#### ARTICLE II.

The purpose or purposes for which the corporation is organized are:

- 1. To engage in the general trash, rubbish and refuse disposal business; to engage in buying, selling, trading, dealing in, hauling, dumping and disposing of trash, rubbish and refuse and similar items and any and all related by-products of all kinds and descriptions; to do all things legal, necessary and proper to be done for the successful conduct of the business herein contemplated and incident to said business.
- 2. To acquire by purchase or lease, or otherwise, lands and interests in lands, and to own, hold, improve, develop and manage any real estate so acquired and to erect or cause to be erected on any lands owned, held or occupied by the corporation, buildings or other structures with their appurtenances, and to rebuild, enlarge, alter or improve any buildings or other

structures so owned, held or occupied, and to mortgage, well, lease or otherwise dispose of any lands or interests in lands, and in buildings or other structures, and any stores, shops, suites, rooms or parts of any buildings or other structures at any time held or owned by the corporation.

- 3. To borrow money and to make, issue, negotiate and deliver its promissory notes, debentures, bonds and other securities or evidence of indebtedness, and to secure payment thereof by mortgage, pledge, or other encumbrance upon all or any part of its property and assets.
- 4. To purchase or otherwise acquire the properties and assets of any other person, firm or corporation and the business and good will thereof, when such acquisition is deemed advisable, and to pay therefor in cash, or in its stock, notes, debentures or bonds; and in any such transaction to assume and undertake or guarantee payment of any part or all of the indebtedness or other obligation of the person, firm or corporation whose properties and business are so acquired.
- 5. To purchase or otherwise acquire, and to invest in, hold, own and dispose of, the stocks, bonds, notes, mortgages, deeds of trust, debendures and other obligations or securities issued by any person, firm, association or corporation, and the bonds or other evidence of obligation of any government, state, city, county or other governmental subdivision.
- 6. To purchase or otherwise acquire shares of its own capital stock, and to hold, sell, exchange, pledge or otherwise acquire, dispose of or retire the same; provided that this corporation shall not use any of its funds or property for the purpose of purchasing its own shares when such use would cause

any impairment of the capital of this corporation, and provided, that the shares of its own stock belonging to this corporation shall not be voted directly or indirectly while so owned.

- 7. To carry on any other lawful business which may be deemed related or tributary to the business of this corporation, including oil, gas, coal, oil shale, or other drilling or mining ventures.
- 8. To conduct business and to have offices and places of business, to acquire, own and dispose of property of all kinds in the State of Colorado and in other states and territories, districts, dependencies, or colonies of the United States, and in any foreign country, subject to compliance with the laws thereof; and generally to have exercise of all of the powers now or hereafter conferred by the general corporation laws of the State of Colorado, whether or not herein specifically mentioned.

#### ARTICLE III.

The period of its duration is perpetual.

#### ARTICLE IV.

The amount of authorized capital stock of this corporation is Forty-nine Thousand (\$49,000.00) Dollars, consisting of Forty-nine Thousand (49,000) shares of common stock of the par value of One (\$1.00) Dollar each, which shall be the aggregate number of shares which the corporation shall have authority to issue, and all shares when issued shall be fully paid and non-liable for corporation debts. The said shares may be issued and sold from time to time by the corporation for such consideration and upon such terms as may from time to time be fixed by the Board of Directors, and shares of this corporation may be issued in consideration of labor done, services performed, or money or property actually received.

#### ARTICLE V.

The address of the initial registered office of the corporation is Garden Office Center, Broomfield, Colorado 80020, and the name of its initial registered agent at such address is R. Jerry Russell.

#### ARTICLE VI.

The number of directors constituting the initial Board of Directors of the corporation shall not be less than three or more than five, who may or may not be stockholde s of this corporation, and the names of the persons, and their addresses, who are to serve as directors until the first annual meeting of shareholders or until their successors are elected and shall qualify are:

R. Jerry Russell, 505 West Midway Blvd., Broomfield, Colorado

Martha S. Hall, 470 West Midway Blvd., Broomfield, Colorado

LuWanna I. Russell, 505 West Midway Blvd., Broomfield, Colorado

#### ARTICLE VII.

Cumulative voting of shares of stock is not authorized.

ARTICLE VIII.

In furtherance and not in limitation of the powers hereinbefore conferred, or conferred by the statutes or the bylaws of this corporation, the Board of Directors shall have the following powers:

- To make, alter, amend or repeal by-laws for the corporation, but any by-law so made may be altered, amended or repealed by the stockholders at any annual or special meeting.
- 2. From time to time to fix and determine, and to vary, the amount of working capital; to determine and direct the use and disposition thereof, to set apart out of any funds

available for dividends, a reserve or reserves for any proper purpose and to abolish such reserve or reserves in the manner in which it was created, and to declare dividends from time to time out of any funds available therefore.

- 3. To designate by resolution passed by a majority of the whole board, an executive committee and such other committees as the Board shall deem desirable, each committee to consist of at least two mambers of the board, which committee or committees, to the extent provided in such resolution or in the by-laws, shall have and may exercise the powers of the Board of Directors in the intervals between meetings of the Board in the management of the business and affairs of the corporation.
- 4. By majority vote of the whole Board of Directors, to sell, lease or convey any part or all of the property and assets of the corporation, including its good will and corporate franchise, upon such terms and conditions and for such consideration as the Board of Directors may deem expedient and for the best interests of the corporation; provided that the sale or disposal of all or substantially all of the property and assets shall be authorized or ratified by the affirmative vote of the holders of at least two-thirds of the capital stock then issued and outstanding (or of each class of stock, if more than one class), such vote to be taken at a meeting of stockholders duly called for that purpose as provided by law.
- 5. To determine from time to time whether and to what extent and at what times and places and under what conditions the stock books, account books and other books and records of the corporation shall be open for inspection by stockholders, and no stockholder shall have any right to inspect any such records unless the request therefor shall be made in writing and in good

faith and for an honest purpose and not for the purpose of injuring the corporation or of interfering with its business.

#### ARTICLE IX.

in whose name any shares of stock are registered on its books as the owner thereof for all purposes, and shall not be bound to recognize any equitable or other claim or to interest in such shares on the part of any other person, whether or not the corporation shall have notice thereof, except upon presentation of the certificate or certificates for such shares property endorsed by the person or persons appearing upon the face of such certificate to be the owner thereof, or accompanied by a proper transfer or assignment separate from the certificate, with the signatures of such endorsement or assignment duly witnessed or quaranteed, or except as may be otherwise expressly provided by the laws of the State of Colorado, or ordered by a Court of competent jurisdiction.

#### ARTICLE X.

Each person herein named or hereafter elected a director of or officer of this corporation, shall be indemnified by the corporation against all costs and expenses, including counsel fees reasonably incurred by or imposed upon him in connection with or resulting from any claim, demand, action, suit or proceeding, or the fair and reasonable settlement thereof prior to final adjudication, to which his is or may be made a party by reason of being or having been a director or officer of this corporation, except as to such matters as to which he shall be finally adjudged in such action to have been derelict in the performance of his duty as officer or director. The right of

indemnification herein provided for shall not be exclusive of any other rights or remedies to which such person may be entitled as a matter of law.

Meetings of the Board of Directors and of the stockholders may be held from time to time outside of the State of Colorado at such times and places as may be designated in the by-laws or resolutions of the Board of directors.

#### ARTICLE XI.

The right is expressly reserved to amend these Articles of Incorporation or any article herein in any manner or respect now or hereafter permitted or provided by the corporation laws of Colorado, and the rights of all stockholders are expressly made subject to such power of amendment.

#### ARTICLE XII.

The name and address of each incorporator is:

R. Jerry Russell, 505 West Midway Blvd., Broomfield,
Colorado

Martha S. Hall, 470 West Midway Blvd., Broomfield, Colorado

LuWanna I. Russell, 505 West Midway Blvd., Broomfield, Colorado

WITNESS our hands and seals this 6 day of May,

1966.

R. Verry Russell

ethe S. Hall

Martha S. Hall

LuWanna I. Russell

STATE OF COLORADO )
) 88.
CCUSTY OF BOULDER )

certify that on the <u>fth</u> day of May, 1966, personally appeared before me, R. Jerry Russell, Martha S. Hall and Luwanna I. Russell, who, being by me first duly sworn, severally declared that they are the persons who signed the foregoing document as incorporators, and that the statements therein contained are true.

IN WITHESS WHEREOF I have hereunto set my hand and Official Seal this 6th day of May, 1966.

My Commission expires: 2-1-69

John R Shaw Notary Public

(SEAL)

### 196693 Anticles of Incorporation

MANUFACTURE MANUFACTURE CONTROL CONTROL

#### DOMESTIC

Filed in the office of the Secretary of State, of the State of Colorado, on the

9th day of MAY A. D. 1966

BYRON A. ANDERSON Secretary of State

Filing Clerk COMMON Fees \$25.00
Old Age Pension Fund \$2.50

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This document has been inspected and promoty Entered on tric Resords of The Fist Tax Department, I &

Date ///

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## **Summary**

Details						
Name	SUNDSTRAND CORPORATION, Colorado Authority Terminated July 27, 1999					
Status	Withdrawn Formation date 11/09/1966					
ID number	19871039025	Form	Foreign Corporation			
Periodic report month	November	Jurisdiction	Delaware			
Principal office street address	4949 HARRISON AVE, ROCKFORD, IL 61125, United States					
Principal office mailing address	n/a					

Registered Agent	
Name	The Corporation Company
Street address	7700 E Arapahoe Rd Ste 220, Centennial, CO 80112-1268, United States
Mailing address	n/a

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Trade names

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## **History and Documents**

06/26/2018 11:15

Name: SUNDSTRAND CORPORATION, Colorado Authority Terminated July 27, 1999

**ID number**: 19871039025

## Found 22 matching record(s). Viewing page 1 of 1.

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#	Event	Date Filed	Date Posted	Effective Date	Document # (click to view)	Comment	
1	Application for Authority	11/09/1966	11/09/1966	11/09/1966 12:00 AM	19871039025	SUNDEL CORPORATION	
2	Trade Name	12/22/1966	12/22/1966	12/22/1966 12:00 AM	19871001185	SUNSTRAND TURBO, A DIVISION OF SUNDSTRAND MACHINE	
3	Surviving Entity In Merger	12/22/1966	12/22/1966	12/22/1966 12:00 AM	19961044994	SUNDSTRAND CORPORATION	
4	Entity Name Change	12/22/1966	12/22/1966	12/22/1966 12:00 AM	Not Indexed	SUNDEL CORPORATION	
5	Amendment	08/31/1987	08/31/1987	08/31/1987 12:00 AM	19871747925	CHANGE RORA	
6	Report	12/14/1991	12/14/1991	12/14/1991 12:00 AM	19861020212	CR86 - 04/28/86 - 8620212	
7	Surviving Entity In Merger	01/30/1992	01/30/1992	01/30/1992 12:00 AM	19921008813	SUNDSTRAND DATA CONTROL, INC	
8	Report Printed	10/22/1992	10/22/1992	10/22/1992 12:00 AM		CR - 11/01/92 - 01/31/93	
9	Amendment	09/01/1993	09/01/1993	09/01/1993 12:00 AM	19931103473	CHANGE RORA	
10	Report Propert	12/13/1993	12/13/1993	12/13/1993 12:00 AM	19881049267	CR88 - 04/29/88 - 881049267	
11	Surviving Entity In Merger	07/07/1994	07/07/1994	07/07/1994 12:00 AM	19941076533	AUXILIARY POWER MAINTENANCE CORPORATION (NONSURVIVOR)	
12	Report Printed	10/17/1994	10/17/1994	10/17/1994 12:00 AM		CR - 11/01/94 - 01/31/95	
13	B Report	01/18/1995	01/18/1995	01/18/1995 12:00 AM	19951014998	CORP REPORT	
14	Report	12/13/1995	12/13/1995	12/13/1995 12:00 AM	19901056176	CR90 - 05/01/90 - 901056176	
15	Report Printed	10/21/1996	10/21/1996	10/21/1996 12:00 AM		CR - 11/01/96 - 01/31/97	
16	S Report	01/31/1997	01/31/1997	01/31/1997 12:00 AM	19971017020	PERIODIC REPORT	
17	7 Report	12/14/1997	12/14/1997	12/14/1997 12:00 AM	19931006472	CR1992 - 01/19/1993 - 19931006472	
18	Report Printed	10/16/1998	10/16/1998	10/16/1998 12:00 AM		CR - 11/01/1998 - 01/31/1999	
19	Report	12/01/1998	12/01/1998	12/01/1998 12:00 AM	19981212007	PERIODIC REPORT	
20	Withdrawal of a Foreign Entity	07/27/1999	07/27/1999	07/27/1999 12:00 AM	19991140614		
21	Filing Officer Correction	11/17/2006	11/17/2006	11/17/2006 06:54 PM		Registered agent's street address augmented to include the suite number	
22	2 Statement of Change	09/16/2016	09/22/2016	09/16/2016 11:56 AM	20161624475	Registered agent address changed; Document lists all affected entities.	

## State of Delaware

## Office of the Secretary of State

941076533 \$60.00

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE CERTIFICATE OF OWNERSHIP, WHICH MERGES:

"AUXILIARY POWER MAINTENANCE CORPORATION", A DELAWARE CORPORATION, NG

WITH AND INTO "SUNDSTRAND CORPORATION" UNDER THE NAME OF "SUNDSTRAND CORPORATION", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, WAS RECEIVED AND FILED IN THIS OFFICE THE THIRTIETH DAY OF JUNE, A.D. 1994, AT 10 O'CLOCK A.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE AFORESAID CORPORATION SHALL BE GOVERNED BY THE LAWS OF THE STATE OF DELAWARE.



SECRETARY OF STATE

AUTHENTICATION:

0648124 8330

944121732

COMPUTER UPDATE COMPLETE DATE: TR

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07-01-94





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			<del></del>							 

MERGER #941076533

AUXILIARY POWER MAINTENANCE CORPORATION (DELAWARE CORPORATION - NOT QUALIFIED)

INTO

SUNDSTRAND CORPORATION (FP871039025) (DELAWARE CORPORATION)
THE SURVIVOR



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## **Summary**

Details						
Name	PROTEX INDUSTRIES INC., Dissolved January 1, 2001					
Status	Administratively Dissolved	Formation date	05/08/1928			
ID number	19871157890	Form	Corporation			
Periodic report month	May	Jurisdiction	Colorado			
Principal office street address	PO BOX 212, OURAY, CO 81427, United States					
Principal office mailing address	n/a					

Registered Agent	
Name	DAVID S. WESTFALL
Street address	316 6TH AVE, OURAY, CO 81427, United States
Mailing address	n/a

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## **History and Documents**

06/26/2018 14:32

Name: PROTEX INDUSTRIES INC., Dissolved January 1, 2001

ID number: 19871157890

## Found 23 matching record(s). Viewing page 1 of 1.

				• , ,		
;	# Event	Date Filed	Date Posted	Effe ctive Date	Document # (click to view)	Comment
1	Articles of Incorporation	05/08/1928	05/08/1928	05/08/1928 12:00 AM	19871157890	AUTOLENE LUBRICANTS COMPANY
2	Entity Name Change	01/02/1962	01/02/1962	01/02/1962 12:00 AM	Not Indexed	AUTOLENE LUBRICANTS COMPANY
3	Trade Name	11/27/1970	11/27/1970	11/27/1970 12:00 AM	Not Indexed	UNIVERSAL ADMIXTURES, INC.
4	Status Changed	09/30/1988	09/30/1988	09/30/1988 12:00 AM		
5	Amendment	12/15/1989	12/15/1989	12/15/1989 12:00 AM	19891112155	CHANGE RORA
6	Reinstatement	12/18/1989	12/18/1989	12/18/1989 12:00 AM	19891112698	
7	' Amendment	02/09/1990	02/09/1990	02/09/1990 12:00 AM	19901007493	
8	Report	12/14/1991	12/14/1991	12/14/1991 12:00 AM	19861007340	CR86 - 03/10/86 - 8607340
ç	Report Printed	04/21/1992	04/21/1992	04/21/1992 12:00 AM		CR - 05/01/92 - 07/31/92
1	0 Report	12/13/1993	12/13/1993	12/13/1993 12:00 AM	19891112698	CR88 - 12/18/89 - 891112698
1	1 Report Printed	04/14/1994	04/14/1994	04/14/1994 12:00 AM		CR - 05/01/94 - 07/31/94
1	2 Report	05/09/1994	05/09/1994	05/09/1994 12:00 AM	19941054126	CORP REPORT
1	3 Report	12/13/1995	12/13/1995	12/13/1995 12:00 AM	19901050410	CR90 - 05/01/90 - 901050410
1	4 Report Printed	04/17/1996	04/17/1996	04/17/1996 12:00 AM		CR - 05/01/96 - 07/31/96
1	5 Report	05/14/1996	05/14/1996	05/14/1996 12:00 AM	19961065338	PERIODIC REPORT
1	6 Report	12/14/1997	12/14/1997	12/14/1997 12:00 AM	19921053111	CR1992 - 05/26/1992 - 19921053111
1	7 Report Printed	04/21/1998	04/21/1998	04/21/1998 12:00 AM		CR - 05/01/1998 - 07/31/1998
1	8 Report Printed	08/25/1998	08/25/1998	08/25/1998 12:00 AM		CR - 08/31/1998 - DA 10/31/1998
1	9 Report	09/29/1998	09/29/1998	09/29/1998 12:00 AM	19981175661	PERIODIC REPORT
2	<b>0</b> Report Printed	04/21/2000	04/21/2000	04/21/2000 12:00 AM		CR - 05/01/2000 - 07/31/2000
2	1 Dissolve an Entity	08/24/2000	08/24/2000	08/24/2000 12:00 AM	20001165701	ART OF DISS-NAME NOW INCLUDES-A DISSOLVED COLORADO CORPORA TION, 2000
2	2 Report Printed	08/25/2000	08/25/2000	08/25/2000 12:00 AM		PR - 08/31/2000 - DA 10/31/2000
2	3 Status Changed	01/01/2001	01/01/2001	01/01/2001 12:00 AM		A DISSOLVED COLORADO CORPORATION, 2001

Mail to: Secretary of State **Corporations Section** 1560 Broadway, Suite 200 COLORADO SECRETARY OF STATE Denver, CO 80202

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## ARTICLES OF DISSOLUTION

Pursuant to the provisions of the Colorado Business Corporation Act, the undersigned corporation adopts the following Articles of Dissolution for the purpose of dissolving the corporation.

FIRST:	The name of the corporation is Protex Industries Inc. DCDLDQ							
SECOND:	The corporation's principal office is(Include City, State, Zip)							
THIRD:	if there is no principal office, the address to which service of process may be mailed.  P. O. Box 212, Ouray, Co. 81427.  The following trade names on file in the office of the Secretary of State are hereby canceled:							
	Protex							
FOURTH:	Date dissolution was authorized December 31,19 99							
FIFTH:	Dissolution was authorized by: Directors ₺ Shareholders ₺ Incorporators □							
SIXTH:	The number of shares voted for the dissolution by each voting group was sufficient for approval.							
	Signature My Me Hall  Title Program							
	Institutel SELLETAR	9						
Delayed Effec	fective Date							
The name of	of the corporation after the effective date of dissolution shall be							
	Protex Industries Inc. a dissolved Colorado corporation, 19 99							

COMPUTER UPDATE COMPLETE OM Revised 7/95 OM

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**Entity Details** 

Incorporation Date 10/17/1966 File Number: 648124 / Formation Date: (mm/dd/yyyy) SUNDEL CORPORATION **Entity Name: Entity Kind:** Corporation Entity Type: General Residency: Domestic State: State: Good Status Date: 10/17/1966 Status: Standing

### TAX INFORMATION

Last Annual Report Filed:	1998	Tax Due: \$ 1778401.59
Annual Tax Assessment:	\$ 74383.56	Total Authorized Shares: 152216516

### **REGISTERED AGENT INFORMATION**

Name:	THE CORPORATION TRUST COMPANY		
Address:	CORPORATION TRUST CENTER 1209 ORANGE ST		
City:	WILMINGTON	County:	New Castle
State:	DE	Postal Code:	19801
Phone:	302-658-7581		

### FILING HISTORY (Last 5 Filings)

Seq	<u>Description</u>	No. of pages	Filing Date (mm/dd/yyyy)	Filing Time	Effective Date (mm/dd/yyyy)
1	Merger; Non- Survivor [Non- Survivor] [Survivor Name] HSSAIL INC.	5	6/10/1999	9:50 AM	6/10/1999
2	Merger [Survivor]	2	6/30/1994	10:00 AM	6/30/1994
3	Merger [Survivor]	2	12/31/1991	10:00 AM	12/31/1991
4	Restated; Domestic	9	12/19/1991	10:00 AM	12/19/1991
5	Retirement - Change to Authorized Shares	2	10/2/1991	10:00 AM	10/2/1991

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## **Michael Fox**

From: DOSDOC, WEB (MailBox Resources) < DOSDOC\_WEB@state.de.us>

**Sent:** Tuesday, June 26, 2018 2:08 PM

**To:** Michael Fox

**Subject:** RE: When you were offline (via LivePerson)

The entity is not in "Good Standing" status it is in a "Merged" status. 648124 merged into HAMILTON SUNDSTRAND CORPORATION 3006271 06/10/1999. The company formed as SUNDEL CORPORATION 10/17/66.

Kind Regards,

Information Center, JLT
State of Delaware | Division of Corporations

401 Federal Street | Suite 4 | Dover | DE | 19901 Main Menu/Info: (302)739-3073 ext 2

Fax: (302)739-3812 or (302) 739-3813

Visit our website: www.corp.delaware.gov www.surveymonkey.com/s/20113rdqtr

----Original Message----

From: Michael Fox [mailto:mfox@toeroek.com]

Sent: Tuesday, June 26, 2018 1:53 PM To: DOSDOC, WEB (MailBox Resources)

Subject: RE: When you were offline (via LivePerson)

I purchased the status record for entity no. 648124, which appears to show it merged out on 6/10/1999, but the status says "Good Standing." Why is that? Also, it appears to be showing an old corporate name.

----Original Message-----

From: DOSDOC, WEB (MailBox Resources) [mailto:DOSDOC WEB@state.de.us]

Sent: Tuesday, June 26, 2018 1:39 PM

To: Michael Fox

Subject: RE: When you were offline (via LivePerson)

Hello,

How may we assist you?

Thank You Information Center - JMS Delaware Division of Corporations 401 Federal Street, Suite 4 Dover, Delaware 19901 (302) 739-3073

www.corp.delaware.gov

----Original Message-----

From: Michael Fox [mailto:mfox@toeroek.com]

Sent: Tuesday, June 26, 2018 5:09 AM To: DOSDOC, WEB (MailBox Resources)

Subject: When you were offline (via LivePerson)

Hello, I have a question about File no. 648124

The above message was sent when you were offline, via your LivePerson account.

Message sent from IP: 69.25.110.80



PAGE 1

# The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER OF "SUNDEL CORPORATION", CHANGING ITS NAME FROM "SUNDEL CORPORATION" TO "SUNDSTRAND CORPORATION", FILED IN THIS OFFICE ON THE FIFTEENTH DAY OF DECEMBER, A.D. 1966, AT 8:30 O'CLOCK A.M.

0648124 8100 071061572 Warriet Smith Windson Secretary of State

FIRST TOTAL COOK OF THE COOK O

AUTHENTICATION: 6033682

DATE: 09-27-07

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### Department of State: Division of Corporations

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# View Search Results

**Entity Details** 

2/18/1999

Incorporation Date

File Number: 3006271 / Formation Date: (mm/dd/yyyy) HAMILTON SUNDSTRAND CORPORATION **Entity Name: Entity Kind:** Corporation Entity Type: General Residency: Domestic State: State: Good Status Date: 3/12/2012 Status: Standing

### TAX INFORMATION

Last Annual Report Filed:	2017	Tax Due: \$ 0
Annual Tax Assessment:	\$ 250	Total Authorized Shares: 10000

### REGISTERED AGENT INFORMATION

Name:	THE CORPORATION TRUST COMPANY		
Address:	CORPORATION TRUST CENTER 1209 ORANGE ST		
City:	WILMINGTON	County:	New Castle
State:	DE	Postal Code:	19801
Phone:	302-658-7581		

### FILING HISTORY (Last 5 Filings)

<u>Seq</u>	<u>Description</u>	No. of pages	Filing Date (mm/dd/yyyy)	Filing Time	Effective Date (mm/dd/yyyy)
1	Merger [Survivor]	2	10/18/2006	4:30 PM	10/18/2006
2	Merger [Survivor]	2	12/18/2003	4:59 PM	12/31/2003
3	Merger [Survivor]	2	12/12/2003	1:19 PM	12/31/2003
4	Merger [Survivor]	2	12/20/2002	5:00 PM	12/31/2002
5	Merger [Survivor]	2	6/28/2002	9:00 AM	6/30/2002

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DAILY QA/QC REPORT	DFR NO. 09
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Saturday, December 16, 2017
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), COLORADO DEPARTMENT OF HEALTH AND ENVIRONMENT (CDPHE), ACT ENVIRONMENTAL/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI) (SUBCONTRACTING FOR ACT), STEWART ENVIRONMENTAL (STEWART)	WEATHER: AM: 45° cloudy PM: 45° partially cloudy

KEY PERSONNEL ON SITE: CDPHE: C. STOVALL; EPA: J. ACKERMAN, M. PATTERSON (START); GEOSYNTEC: J. ROWLEY, E. STOCKWELL, T KRASOVEC; ACT/PSC: H. BUTLER (PM), T. MOORE (GM), W. CULLEN (H&S), B. CARPENTER, S. GARLIE, L. SAENZ, M. ARMSTRONG, T. HAASL, K. BEEK, S. GANIK, J. WILLIAMS, J. BLAKE; DS: J. FICCA, T. HOLZFASTER

## **CONTRACTOR ACTIVITIES**

Details of Drum Removal Activities:

- 1. ACT's CAT 308E excavator worked on excavating drums from Phase 2A pit.
- 2. ACT's TAKEUCHI TB285 excavator worked on excavating drums from Phase 2B pit.



DAILY QA/QC REPORT	DFR NO. 09
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Saturday, December 16, 2017
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
QA/QC ACTIVITIES – PHASE 2A	

0700: Geosyntec onsite. Tailgate meeting, equipment and sampling preparation (i.e. PID calibration)

0845: ACT's CAT308E excavator finished extending a work bench to reach drums and dig deeper. Began excavating pit where activities stopped yesterday.

0900: ACT encountered a drum leaking liquid from a hole in the bottom onto the soil beneath it in the pit. The PID read 30 ppm, and the liquid was determined to be water. The drum will be placed into the PT3017 roll-off bin.

0930: ACT encountered a drum [RTR-51] that was ¾ full of soil that was reading above 1000ppm. The drum was placed in an overpack and will need to be sampled later.

0945: ACT encountered a drum [RTR-53] that was ¼ full of soil. A sample of soil was taken and placed into an 8oz. amber wide-mouth jar to be used as a part of a composite sample once 4 other soil samples have been collected. The jar reads "53" on top. The soil that was sampled was black, rusty and compacted. There were no readings, but the soil was visibly different. The remaining soil was placed in a 55-gallon drum, and will be combined with 4 other drums to represent the composite sample. "53" was written on the top of the drum, and the numbers of the other drums that contain soil will also be written on the top of the drum. The old drum was deemed RCRA empty, and will be placed in the PT3017 roll-off bin. The pit was consistently reading 15 ppm in ambient air.

1015: A drum [RTR-55] was encountered which was ¾ full of liquid, and mostly intact. The readings on the VOC were above 1000ppm, but the PID monitor does not exceed readings above 999, so an exact reading of the VOC's is unknown. The LEL reading was 6.

1023: A Coliwasa barrel sampler was used to sample the liquid in the drum. Sample NLF-LW-DG1-DNV6-121617 was collected.

1048: ACT encountered a drum [RTR-59] with LEL reading 60 and VOC's over 1000. There were pin sized holes in the base of the drum and liquid leaked out. The drum was placed into an overpack, soil which had been contaminated by the liquid was placed on top of the drum and sealed to be sampled later if deemed necessary.

1130: Break for lunch.

1230: ACT CAT308E excavation resumed. Clean soil (less than 100ppm, and not visibly different) surrounding the drums in the pit was stockpiled next to the excavator. ACT's CAT Bobcat 259D took RCRA empty drums to the roll-off bin PT3017 throughout the day. The clean soil was placed in the staging area.

1305: Dirty soil (VOC's 80-100) was encountered in drum [RTR-60] containing black and red clay-like material. Black filters were in the drum as well.

1320: NLF-SS-DG1-DINV7-121617 sample collected. Soil that was not sampled from the drum was placed into a 55-gallon drum. The empty old drum was then placed into roll-off PT3017.

1440: Drum [RTR-63] containing light yellow/green liquid with holes in the side was encountered. The drum was turned on its side to stop the leaking. The VOC's read approximately 500ppm. ACT went onto supplied air to access the drum. Liquid from the drum that was leaking had pooled beneath the drum. The drum was placed in an overpack. It was not possible to sample the liquid from the drum. The liquid that leaked out of the drum and pooled was sampled. Soil that was contaminated by the leaking liquid around the drum was placed into a 55-gallon drum. Black bags containing an unknown black sludge material were placed into the 55-gallon drum as well.

1500: NLF-LW-DG1-DNV8-121617 – a black liquid was sampled. This sample may contain liquid which had leaked from [RTR-59], [RTR-63] and drum [RTR-64]. At the time the sample was collected, it was believed to be liquid only from drum [RTR-63], however, after further excavation it was decided there may be cross contamination of the liquid from all 3 drums.

1515: A drum [RTR-64] was encountered below [RTR-63] was leaking. The readings were very high for this drum. LEL: 100%, and VOC's over 1000 ppm. Since the drum was buried, and on it's side, an air knife was used to dislodge it from it's position.

1530: A concerned citizen stopped on the side of the road in a black vehicle and took pictures of the activities taking place in Phase 2A. Joyce Ackerman (EPA) spoke with the citizen regarding their concerns.

1615: The drum [RTR-64] was full and "felt" solid with some liquid when the excavator was moving it. It was placed into an overpack bin

1630: Excavation stopped for the evening and caution tape was placed on stakes surrounding the pit.



DAILY QA/QC REPORT	DFR NO. 09
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Saturday, December 16, 2017
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02

### QA/QC ACTIVITIES - PHASE 2B

0700: Geosyntec onsite. Tailgate health and safety meeting.

0730: Calibrate PIDs. Equipment and sampling preparation.

0815: Mobilize to Excavations. ACT's TAKEUCHI TB285 excavator is excavating in 2B. ACT's CAT 308E excavator is excavating in Excavation Area 2A (2A).

0820: Begin containing drums and soil removed from the excavation yesterday. Move skin of RTR-69 to roll-off bin 3017. Move skin of RTR-79 and soil from RTR-79 into overpack drum RTR-79. Move RTR-74 into overpack drum RTR-74. Collect 8 oz sample of soil from RTR-74 for future sample compositing.

0900: Remove skin of RTR-81 from excavation and place in roll-off bin 3017.

0911: Remove RTR-76 from excavation. Collect 8 oz sample of soil form RTR-76 for future sample compositing. Soil below RTR-76 has PID reading of 337 ppm. Move RTR-76 into overpack drum RTR-76, add soil from below RTR-76 into overpack drum with RTR-76.

0923: Check readings in RTR-77: PID > 1500ppm, LEL = 0.

0927: Check readings in RTR-75: PID > 1000ppm, LEL = 0.

0928: Check readings in RTR-80: PID = 75-80ppm. LEL = 0. Pull RTR-80 out of excavation, drum is empty and mangled. Place RTR-75 in roll-off bin 3017.

0930: Unearth RTR-81. PID = 30ppm, LEL = 0. Pull RTR-81 out of excavation, drum is empty and mangled. Place RTR-82 in roll-off bin 3017.

0946: Check readings in RTR-75: PID = 1000ppm, LEL = 0. Pull RTR-75 out of excavation, about 0.5 gallons of water drip off of drum. Drum is mangled. Contains about 5 gallons of hard, red solids. Bottom of drum has markings that says "JORGENSEN PAINT CASPER WYO." Place RTR-75 in overpack drum RTR-75, as well as soils from beneath RTR-75.

1000: Collect sample NLF-SS-DG2-DINV5-121617 of red solids in RTR-75.

1015: Soil beneath RTR-75 is wet with PID readings > 100ppm. Soil is dug out and placed in new drum called RTR-75. Collect 8 oz sample of soil from beneath RTR-75 for future sample compositing.

1036: Check readings in RTR-77: PID = 2300ppm, LEL = 3.

1058: Add UltraSorb to RTR-77.

1121: Pull RTR-77 out of excavation and into overpack drum RTR-77. Drum is mangled with about 5 gallons of soil in drum. Collect 8 oz sample of soil form inside RTR-77 for future soil compositing. Soil beneath RTR-77 has PID reading of 510ppm.

1132: Break for lunch.

1230: Return to excavations.

1310: Check readings in RTR-35: PID = 45ppm, LEL = 0.

1317: Remove RTR-35 from excavation. Encounter water beneath RTR-35. Move RTR-35 skin to roll-off bin 3017 and shovel water and soil from beneath RTR-35 into new drum "Phase 2B Consolidation."

1345: Open RTR-67. PID = 650ppm, LEL = 0. Drum contains mainly rags, as well as a sample jar and a small amount of soil. Collect 8 oz sample of soil from RTR-67 for future compositing. Move RTR-67 into overpack drum RTR-67.

1412: Open RTR-83. PID = 150ppm, LEL = 0. Remove empty skin of RTR-83 from excavation and place in roll-off bin 3017.

1421: Remove RTR-71 from excavation. Drum contains filters/rollers, rags, and mops. PID = 250ppm, LEL = 0. Place drum and drum contents onto plastic sheeting. Place drum contents into 2 new drums, both labeled "RTR-71." Place RTR-71 drum skin into roll-off bin 3017.

1458: Remove RTR-23 from excavation. PID = 0ppm, LEL = 0. About 2.5 gallons of soil in drum, placed in "Phase 2B Consolidation" drum. Water encountered below drum. Shovel water and soil from beneath RTR-23 into "Phase 2B Consolidation" drum. Place RTR-23 skin in roll-off bin 3017.

1505: Remove RTR-68 from excavation. PID = 0, LEL = 0. About 2.5 gallons of soil in drum, placed in "Phase 2B Consolidation" drum. Water encountered below drum. Shovel water and soil from beneath RTR-68 into "Phase 2B Consolidation" drum. Place RTR-68 skin in roll-off bin 3017. Label on top of drum reads "Solvent...IBM Corporation...Boulder, Colorado."

1523: Remove RTR-72 from excavation. PID > 1500ppm, LEL = 0. Drum intact except for 1 hole on side of drum. Sludge falls out of hole, collect 8 oz sample of sludge from RTR-72 for future compositing.

1548: Check readings in RTR-85: PID = 1500ppm, LEL = 0. Will let vent overnight.

1558: Finish excavating for the day. Begin cleaning up.

1620: Mobilize to trailer to wrap up paperwork.



### **DAILY QA/QC REPORT DFR NO. 09** PROJECT AND SITE INFORMATION SITE: Neuhauser Landfill, Weld County, CO DATE: Saturday, December 16, 2017 PROJECT: Neuhauser Landfill Drum Removal PROJECT/PHASE/TASK NO.: DE0302/03/02

### **DAILY TIME SUMMARY**

HOURS - 10.5

### OTHER INFORMATION

Drums encountered today: RTR-47 through RTR-64 in Phase 2A pit RTR-67 through RTR-85 in Phase 2B pit Prepared By: Jackie Rowley & Emily Stockwell

Jogen Poly Emily Stull

## **РНОТО**

Photograph No.: 01

**Description:** ACT and PSC crew excavating drums by hand with a spark free shovel.





Photograph No.: 02

**Description:** Staging area for contaminated soil next to the Phase 2A pit. Staging area is covered with a Visqueen covering overnight.



## **РНОТО**

Photograph No.: 03

**Description:** Drum RTR-75 with markings stating "JORGENSEN

PAINT CASPER, WYO"





Photograph No.: 04

**Description:** Red solids from drum RTR-75. Sample ID NLF-SS-DG2-DINV5-121617 from Phase 2B pit. Drum RTR-60 from Phase 2A pit contained very similar contents along with black filters and were sampled. Sample ID NLF-SS-DG1-DINV7-121617.



Photograph No.: 05

**Description:** Drum RTR-83 from Phase 2B pit with contents of rollers, mops, and rags. Drum RTR-56 from Phase 2A pit had very similar contents.





# РНОТО

Photograph No.: 06

**Description**: Label on drum

RTR-68.



Photograph No.: 07

**Description**: Label on drum

RTR-68.





DAILY QA/QC REPORT	DFR NO. 13
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Wednesday, December 20, 2017
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), ACTENVIRO/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI), STEWART ENVIRONMENTAL	WEATHER: AM: 33° sunny PM: 60° sunny

KEY PERSONNEL ON SITE: EPA: J. ACKERMAN, E. SANDUSYKY (WESTON); GEOSYNTEC: E. STOCKWELL, P. MEDLAND, T. KRASOVEC; ACT/PSC: H. BUTLER (PM), T. MOORE (GM), J. MARTZ, B. CARPENTER, S. GARCIA, M. ARMSTRONG, T. HAASL, J. WILLIAMS, J. BLAKE; DS: J. VANWAZER, T. HOLZFASTER; ERM: S. JAMES

### CONTRACTOR ACTIVITIES

Details of Drum Removal Activities:

- 1. ACT's CAT 308E excavator worked on excavating drums from Phase 2A pit.
- 2. ACT's TAKEUCHI TB285 excavator worked on excavating drums from Phase 2B pit.

### QA/QC ACTIVITIES - PHASE 2A

- 0700: Geosyntec onsite. Tailgate health and safety meeting.
- 0730: Calibrate PIDs. Equipment and sampling preparation.
- 0815: Mobilize to Excavations. ACT's TAKEUCHI TB285 excavator is excavating in 2B. ACT's CAT 308E excavator is excavating in 2A.
- 0840: Begin excavating. ACT is on supplied air.
- 0906: Remove RTR-155 from excavation. Partial drum, empty.
- 0920: Remove what appears to be the bottom half of RTR-155. Drum contains sludge. Collect 8 oz. sample of sludge for future compositing. Place drum in overpack.
- 1000: Encounter RTR-156, which contains liquid that appears to be the same as drum RTR-21. Add 3 bags UltraSorb to drum.
- 1105: Remove a drum lid from the excavation.
- 1119: Remove RTR-156 from excavation. Place in overpack. Add black soil encountered beneath RTR-156 to overpack drum.
- 1130: Break for lunch.
- 1300: Return to excavations.
- 1345: Uncover RTR-157 and take photos. Drum appears to be full of black liquid up to the open bung hole.
- 1351: Remove RTR-158 from excavation. Place in overpack,
- 1415: Place RTR-157 in overpack. Small hole on bottom of drum, about 0.5 gallons of liquid leaks out of hole and about 0.5 gallons of liquid leaks out of bung hole while placing drum in overpack. Spilled liquid and impacted soil shoveled into overpack with drum. Liquid appears to be the same as in RTR-21. ACT states that liquid that spilled out of the top bung hole was black, and the liquid that leaked out of the bottom of the drum was clear with a green/yellow tint.
- 1445: Encounter about 1 gallon of white, salt-like solid wrapped in plastic in a small shipping container/box with only "1968" legible. Mix a small about of solid with water and test pH, which is about 11.
- 1455: Collect sample of white solid: NLF-SS-DG1-DINV12-122017. Scoop remaining solid into 5-gallon bucket.
- 1515: Perform cyanide field test kit on sample of while solid.
- 1545: Scoop white solids from pit and 5-gallon bucket into new 55-gallon drum labeled RTR-159.
- 1600: Cyanide field test kit does not indicate cyanide in sample.
- 1605: Cleaning up and covering excavations for the evening.
- 16: Geosyntec offsite.



PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Wednesday, December 20, 2017
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02

### QA/QC ACTIVITIES - PHASE 2B

0700: Geosyntec onsite. Tailgate health and safety meeting.

0730: Calibrate PIDs. Equipment and sampling preparation.

0815: Mobilize to Excavations. ACT's TAKEUCHI TB285 excavator is excavating in 2B. ACT's CAT 308E excavator is excavating in 2A.

0835: Place soil from underneath excavated RTR-73 (excavated yesterday) into a drum. Mix of soils that fell out of RTR-73 and contaminated soils below.

0850: Begin excavation of overburden in new area (southern edge) of 2B as no other drums have been located.

1035: Encounter large trash pile with lots of plastic sheeting. (See pictures below)

1045: Excavate RTR-104 located in trash pile. Empty 3-5-gallon steel drum. PID less than 10 ppm, LEL = 0%

1145: Break for lunch. Lots of overburden removed, but only one drum and large trash pile encountered. End excavation in 2B for today.

### OTHER INFORMATION

Drums excavated today:

Phase 2A: RTR-155, RTR-156, RTR-157, RTR-158, RTR-159

Phase 2B: RTR-104

Prepared By: Emily Stockwell & Patrick

Medland

Emily Studle Patel Much

### **PHOTO**

Photograph No.: 01

**Description:** Drum RTR-157, which was found with no bung plug and full of a black liquid.





Photograph No.: 02

**Description:** Moving RTR-157 into overpack drum.



Photograph No.: 03

**Description:** White, salt-like solid found in a small shipping container/box (RTR-159). A sample of the material was collected: NLF-SS-DG1-DINV12-122017.





Photograph No.: 04

**Description:** Excavated trash pile. Contained RTR-104. Excavation located at:

40.024078 -105.020507



Photograph No.: 05

**Description:** Debris found in

trash pile

40.024078 -105.020507





Photograph No.: 06

**Description**: Label on RTR-104

40.024078 -105.020507





DAILY QA/QC REPORT	DFR NO. 15
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Friday, December 22, 2017
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), ACTENVIRO/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI), STEWART ENVIRONMENTAL	WEATHER: AM: 10° clear PM: 32° clear
KEY PERSONNEL ON SITE: EPA: J. ACKERMAN: GEOSYNTEC: E. STOCKWELL, J. ROWLEY, T. K	(RASOVEC: ACT/PSC: H. BUTLER (PM), T. MOORE

(GM), B. CARPENTER, M. ARMSTRONG, T. HAASL, J. WILLIAMS; DS: J. VANWAZER, T. HOLZFASTER; ERM: S. JAMES

### **CONTRACTOR ACTIVITIES**

Details of Drum Removal Activities:

1. ACT's CAT 308E excavator worked on Test Pits in Phase 3 area and excavating drums from the eastern portion of the Phase 1 area, and TAKEUCHI TB285 excavator worked on excavating drums from the western portion of the Phase 1 area.

### QA/QC ACTIVITIES - PHASE 1

- 0800: Geosyntec onsite. Tailgate health and safety meeting.
- 0815: Prepare paperwork, sampling equipment, and calibrate PID.
- 0840: Mobilize to Phase 1 area. Begin excavating in the western portion of the Phase 1 area.
- 1215: Break for lunch.
- 1300: Resume excavating in Phase 1 area.
- 1500: Finish excavating in Phase 1 area for the day. Begin counting drums removed from Phase 1 area.
- 1613: 26 drums removed from Phase 1 western area, 54 drums removed from Phase 1 eastern area. Drum carcass placed in roll off bin 4543. Visually impacted soil from near and below drums placed in roll off bin 4699.
- 1630: Geosyntec offsite.

### QA/QC ACTIVITIES - PHASE 3

- 0800: Geosyntec onsite. Tailgate health and safety meeting.
- 0815: Prepare paperwork, sampling equipment, and calibrate PID.
- 0840: Mobilize to Phase 3 area.
- 0847: Begin excavating Test Pit 6 at NE corner of staked Phase 3 area.
- 0856: Test Pit 6: NE corner stake of Phase 3. Bedrock at about 5 feet below ground surface (bgs). No grey/black soil or sludge observed. No groundwater observed. PID = 0ppm. Fill Test Pit 6 with soil removed from Test Pit 6.
- 0910: Test Pit 7: NW corner stake of Phase 3. Bedrock at about 7 feet bgs. Trash at about 2-3 feet bgs. Grey/black sludge at about 5-7 feet bgs. Sludge layers appears to be thicker to the south and thinner to the north. No groundwater observed. PID = 8000ppm. Fill Test Pit 7 with soil removed from Test Pit 7.
- 0925: Test Pit 8: At the base of the "hill" on the west side of Phase 3. Bedrock at about 8 feet bgs. Clean soil to about 2 feet bgs. Trash and grey/black sludge at about 2-8 feet bgs. Groundwater at about 4 feet bgs. PID = 80ppm. Fill Test Pit 8 with soil removed from Test Pit 8.
- 0938: Test Pit 9: About 50 feet west of Test Pit 8. Bedrock at about 12 feet bgs. Grey/black sludge at about 2-12 feet bgs. Groundwater at about 10 feet bgs. PID = 8ppm. Fill Test Pit 9 with soil removed from Test Pit 9.
- 0947: Collect sample of sludge from about 12 feet bgs in Test Pit 9: NLF-SL-PHASE3-TP9-122217.
- 1010: Test Pit 10: About 100 feet south of Test Pit 6. Bedrock at about 8 feet bgs. Grey/black sludge at about 5-8 feet bgs. No groundwater observed. PID = Oppm. Fill Test Pit 10 with soil removed from Test Pit 10.
- 1010: Test Pit 11: Approximately halfway between Test Pit 6 and Test Pit 10. Bedrock at about 4 feet bgs. No grey/black soil or sludge observed. No groundwater observed. PID = 0ppm. Fill Test Pit 11 with soil removed from Test Pit 11.
- 1029: Finish test pits. Excavator moves to Phase 1 area.

Drums excavated today:	Prepared By: Emily Stockwell
Phase 1: RTR-294 to RTR-372	Emily Studd



# DAILY QA/QC REPORT PROJECT AND SITE INFORMATION SITE: Neuhauser Landfill, Weld County, CO PROJECT: Neuhauser Landfill Drum Removal DATE: Friday, December 22, 2017 PROJECT: Neuhauser Landfill Drum Removal PROJECT/PHASE/TASK NO.: DE0302/03/02

## **PHOTO**

Photograph No.: 01

**Description:** Excavating Test Pit



Photograph No.: 02

**Description:** Magnetic tape removed while excavating Test Pit 9.





Photograph No.: 03

**Description:** Excavating in the eastern portion of Phase 1 area.



Photograph No.: 04

**Description:** Excavating in the western portion of Phase 1 area.





DAILY QA/QC REPORT	DFR NO. 17
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Thursday, January 4, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), ACTENVIRO/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI), STEWART ENVIRONMENTAL	WEATHER: AM: 30° clear PM: 50° clear

KEY PERSONNEL ON SITE: EPA: J. ACKERMAN; WESTON: E. SANDUSKY; GEOSYNTEC: E. STOCKWELL, P. MEDLAND, T. KRASOVEC; ACT/PSC: H. BUTLER (PM), T. MOORE (GM), B. CARPENTER, M. ARMSTRONG, T. HAASL, J. JOAB, S. GARCIA, J. WILLIAMS, C. PENEZ, S. JANDOR; DS: J. FICCA, T. HOLZFASTER; ERM: P. MEHRING; SES: P. ANDERSON

### **CONTRACTOR ACTIVITIES**

Details of Drum Removal Activities:

1. ACT's CAT 308E excavator worked on excavating in the Phase 1 area, and TAKEUCHI TB285 excavator worked on excavating in the Phase 2B area.

### QA/QC ACTIVITIES - PHASE 1

0700: Geosyntec onsite. Tailgate health and safety meeting.

0730: Prepare paperwork and sampling supplies.

1030: Excavated drums RTR-375 and RTR-376. Contained a tar-like sludge similar to the substance found in a drum and sampled on December 22, 2017. PID: 30-35 ppm and LEL = 0%

1600: Excavated 69 drum carcasses today plus the two drums that had a tar-like substance. Soils in and around the carcasses had PID measurements less than 10 ppm (usually 1-2 ppm) and LEL = 0%.

1650: Geosyntec offsite.

### QA/QC ACTIVITIES - PHASE 2A

\*Sampling will resume when excavations of this pit resume.

## QA/QC ACTIVITIES - PHASE 2B

0655: Geosyntec onsite. Tailgate health and safety meeting.

0730: Prepare paperwork and sampling supplies.

0830: Mobilize to pit 2B4 to observe excavations. Donned PPE and respirators when ambient atmosphere outside of pit read 7-8 ppm. Excavations during this time encountered soils between 70-80ppm. Readings were encountered from a pocket of darker soil along the E wall of the pit at approximately 2' deep. Surface soil outside of the dark pocket read a consistent 2-3ppm. All soil below 10 ppm was stockpiled in a clean soil staging area to the east of the pit [contaminated soil was staged on plastic sheeting adjacent to the clean pile].

1100-1105: Uncovered a plastic reel covering used to dispense magnetic tape. A square white label was found within a blue circle on the base of the covering and read, "IBM Data Processing Magnetic Tape." No contaminated soil was visible near the covering. Took photos (ref. photo #3) and resumed excavation.

1230: Broke for lunch.

1330: Resumed excavation. Uncovered a newspaper displaying the date, "01/09/1969." (ref. photo #4)

1515: Drum [RTR-106] was uncovered approximately 2 feet below ground surface in the central southeast portion of the pit. The drum was partial, rusted, and crushed. It was partially filled with soil which had fallen in, as well as mop heads, rags, 5-intact 8-12 oz. transparent glass jars which contained a brown clay-like solid surrounded by a clear to yellow liquid. Some jars contained a brown material of paint consistency, and some contained a more solid brown material which appeared to have separated from the liquid in the jar. (ref. photo #6). Directly below drum [RTR-106] was a second drum [RTR-107] on its side. The top of the drum had partially caved in displaying light brown liquid contents. The liquid was sampled using a Koliwasa tool.

1550: NLF-LW-PHASE2B-DINV16-1234 (duplicate) and NLF-LW-PHASE2B-DINV17-1550 liquid samples were taken. (ref. photo #5)

1655: Geosyntec offsite.

### QA/QC ACTIVITIES - PHASE 3

MW-2 was found to have a damaged PVC at about 2 feet below ground surface. The screen smelled like MEK, was stained black, and looked "jello"-like according to the EPA. (Photo Ref. #)



# DAILY QA/QC REPORT PROJECT AND SITE INFORMATION SITE: Neuhauser Landfill, Weld County, CO PROJECT: Neuhauser Landfill Drum Removal PROJECT: Neuhauser Landfill Drum Removal PROJECT/PHASE/TASK NO.: DE0302/03/02 Drums excavated today: Phase 1: Phase 2B: RTR-106 and RTR-107.

## **PHOTO**

Photograph No.: 01

**Description:** Tar-like sludge found in RTR-375 and RTR-376.





Photograph No.: 02

**Description:** Excavated section of the MW-2 well. Bottom part of remaining screen (on right) located about 2 feet below ground surface.



Photograph No.: 03

**Description:** Plastic magnetic tape reel covering.







# DAILY QA/QC REPORT

**DFR NO. 17** 

PROJECT AND SITE INFORMATION

SITE: Neuhauser Landfill, Weld County, CO

DATE: Thursday, January 4, 2018

PROJECT: Neuhauser Landfill Drum Removal

PROJECT/PHASE/TASK NO.: DE0302/03/02

Photograph No.: 04

**Description:** Newspaper clipping found in Phase 2B displaying date 01-15-1969.



Photograph No.: 05

**Description:** Liquid contained in

sample from Phase 2B.





Photograph No.: 06

**Description:** Glass jars found above a black plastic bag in between drums RTR-106 and RTR-107. 2 close up examples of the jars show content contained in jars.







DAILY QA/QC REPORT	DFR NO. 20
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Monday, January 8, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), ACTENVIRO/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI), STEWART ENVIRONMENTAL	WEATHER: AM: 20-30° cloudy PM: 30-45° mostly cloudy

KEY PERSONNEL ON SITE: EPA: J. ACKERMAN; WESTON: E. SANDUSKY; GEOSYNTEC: P. MEDLAND; ACT/PSC: H. BUTLER (PM), T. MOORE (GM), B. CARPENTER, M. ARMSTRONG, J. JOAB, S. GARCIA, C. HENDEREK, C. PEREZ, S. JANDOR, K. BEEK; DS: J. FICCA, T. HOLZFASTER; ERM: A. ESCUREDO, S. HARRY; SES: P. ANDERSON

### **CONTRACTOR ACTIVITIES**

Details of Drum Removal Activities:

 ACT's TAKEUCHI TB285 excavator worked on excavating in the Phase 1 area, and CAT 308E excavator worked on excavating in the Phase 2B area.

### QA/QC ACTIVITIES - PHASE 1

0815: Begin excavation

1215-1345: Break for lunch.

1620: No samples collected today. A total of 31 drums removed. 4 were placed into overpacks RTR-493, RTR-494, RTR-495, and RTR-496.

### QA/QC ACTIVITIES - PHASE 2A

Excavations did not take place in this pit today.

### QA/QC ACTIVITIES - PHASE 2B

0655: Geosyntec onsite.

- 0700: Prepare paperwork and sampling supplies. Tailgate health and safety meeting.
- 0815: Mobilize to pit, plan excavation, and suit up in Level B PPE
- 0918: Remove soils from beneath RTR-117, which was excavated Saturday and place into overpack RTR-117. PID 30-40 ppm
- 0945: Unearth RTR-121 and RTR-122. PID in both drums >10,000 ppm, LEL=0%, pH of liquid = 7.
- 1010: Collect NLF-LW-DG2-DINV20-010818 from liquid in RTR-122. Liquid from RTR-121 appeared to drain into RTR-122 while removing liquid. Liquid placed into Overpack RTR-121/122
- 1025: Excavate RTR-121 and place into Overpack RTR-121/122
- 1036: Excavate RTR-118 and place into Overpack RTR-118. Liquid from in and around drum also placed into overpack. Liquid seems to be connected to liquid in drums RTR-121 and RTR-122. Possibly groundwater.
- 1104: Excavate RTR-122. Place into overpack RTR-122.
- 1120: Place soils and liquid that were under RTR-122 into drum RTR-122 Soils Below.
- 1135: Excavate RTR-123. Place into overpack RTR-123
- 1145: Remove more soils from the southeast corner of the current pit. Find more drums partially submerged in groundwater (approx. 5 feet below ground surface). Unearthed lots of debris including IBM schematics.
- 1215-1345: Break for lunch
- 1426: Resume excavation of pit 2B.
- 1440: Excavate RTR-125 and place into overpack RTR-125.
- 1525: Excavate RTR-124 and place into overpack RTR-124.
- 1532: Excavate RTR-116. Has markings on top lid and is filled with sealed jars, rags, and other trash. PID= 3300 ppm, LEL = 0%. Placed into overpack RTR-116.
- 1558: Excavate RTR-115. PID > 15,000 ppm, LEL = 0%. Contains rollers and some soil. Placed into overpack RTR-115.
- 1611: Finish excavation in pit 2B for the day.
- 1700: Geosyntec offsite.

### QA/QC ACTIVITIES - PHASE 3

No excavations took place in this pit today.



# DAILY QA/QC REPORT

DFR NO. 20

PROJECT AND SITE INFORMATION

SITE: Neuhauser Landfill, Weld County, CO DATE: Monday, January 8, 2018

PROJECT: Neuhauser Landfill Drum Removal PROJECT/PHASE/TASK NO.: DE0302/03/02

Drums excavated today:

Phase 1: up to approximately RTR-496.

Phase 2B: RTR-115, 116, 118, 121, 122, 123, 124, and 125

Prepared By: Patrick Medland

Patril Mule

## **РНОТО**

Photograph No.: 01

**Description:** RTR-115, 116, and 118 in ground to be excavated - Marked with paint. Note – bottom of RTR-118 (on left) near water table

40.013944 -105.041030





Photograph No.: 02

**Description:** Pool of exposed groundwater. RTR-125, RTR-124, and RTR-116 are painted

on the right.

40.013944 -105.041030





Photograph No.: 03

**Description:** Schematics removed from the area near

RTR-118



Photograph No.: 04

**Description:** IBM Stamp found

on schematics.

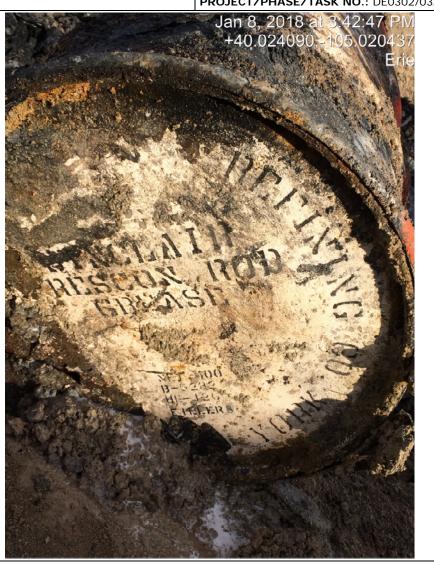




Photograph No.: 05

Description: RTR-116. Lid with

markings





DAILY QA/QC REPORT	DFR No. 21
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Tuesday, January 9, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
contractors and agencies involved: us environmental protection agency (EPA), ACTenviro/PSC (act), DS ENVIRONMENTAL (DS) (CABI), Stewart environmental	WEATHER: AM: 45° clear, windy PM: 50° clear

key personnel on site: EPA: J. Ackerman; Weston: E. Sandusky; Geosyntec: J. Rowley, T. Krasovec; ACT/PSC: h. butler (PM), T. Moore (GM), B. CARPENTER, M. ARMSTRONG, T. Haasl, J. Joab, S. Garcia, J. Williams, C. Penez, S. Jandor; DS: J. Ficca, T. Holzfaster; ERM: P. Mehring; SES: P. Anderson

## **Contractor Activities**

### Details of Drum Removal Activities:

1. ACT's CAT 308E excavator worked on excavating in the Phase 1 area, and TAKEUCHI TB285 excavator worked on excavating in the Phase 2B area.

# QA/QC activities - phase 1

1130: Encountered a drum [RTR-497] carcass which contained a black paint-like substance. Did not sample because there is a sample representative of this substance already.

1650: Geosyntec offsite.

# QA/QC activities - phase 2A

Excavations did not take place in this pit today.



DAILY QA/QC REPORT	DFR No. 21
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Tuesday, January 9, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
A/OC activities – phase 2B	

A/QC activities – phase 2B

815: Geosyntec onsite. Update on H&S topics.

0830: Calibrate PID and filled coolers with sample jars.

0845: Drum [RTR-126] contained approx. 48oz of liquid which read pH 6. The liquid was clear/yellowish and denser than water. It had about 2mm of brown liquid floating above. This clear/yellowish dense oily liquid has been sampled already. (Photo Ref. #1)

0903: Drum [RTR-120] had pH=5-6. Drum was placed in an overpack. The drum is light green and has a "Freon TF Solvent" label on the top and side. About 30oz of liquid spilled out of a hole in the Freon drum and collected near the base of the drum in the soil in the pit. Since Freon has already been deemed hazardous, it was not sampled. (Photo Ref. #2)

0935: Encountered a drum [RTR-127] with PID=1450ppm and LEL=0. The drum was ¼ full and contained red powdered soil. No sample was taken because the red soil has already been sampled. Earlier this morning a label was found. The label is white with black print. The front of the label lists categories and numbers. There is no identifying print left except in the bottom middle under a category that is not entirely legible because the first two letters of the category have been scratched off. The category reads, "xxwork instructions" and 3 lines below this category at the bottom reads, "IxM 867639" whereas x are the two letters which are not legible. This is presumed to be an IBM packing slip. An ACT contractor said the label had deteriorated in quality since having been found an hour earlier, and that it had read "IBM 867639." (Photo Ref. #3)

1025: Drum [RTR-128] was encountered in the east sidewall of the pit. It's an empty carcass.

1104: Ambient air outside of the pit is consistently reading PID~50 ppm while excavating the east sidewall.

1140-1150: ACT uncovered 2 magnetic tape reels- one that was still intact, and one which was just the label. The outside front read, "IBM Magnetic Processing Tape" and the back was a blue and blank. When the intact reel was opened the contents were empty. (Photo Ref. #4)

1200: Break for lunch.

1300: ACT spraying water on the roads because of higher winds and dust picking up. Installing silt fencing along the road next to Phase 2 area, and around Phase 1 in case of rain.

1458: Near the northeastern end of the Phase 2B pit, ACT excavated a pile of trash approximately 3ft below ground surface and found old cardboard boxes with company label names on them. One box had "IBM" on it, and another had "Microswitch Illinois" stamped with ink. (Photo Ref. #5&6)

1505: Groundwater has been seeping into the north and south end of the 2B pit. (Photo Ref. #7&8)

1655: Geosyntec offsite.



DAILY QA/QC REPORT	DFR No. 21
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Tuesday, January 9, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
Qa/qc activities – phase 3	
Excavations did not take place in this pit today.	
Drums excavated today:	Prepared By: Jackie Rowley
Phase 1: RTR-497 through RTR-565	
Phase 2B: RTR-126 through RTR-130	Jaguer Fulz

# Photo

Photograph No.: 01

**Description:** Fluid collected

from RTR-126.





# PROJECT AND SITE INFORMATION SITE: Neuhauser Landfill, Weld County, CO PROJECT: Neuhauser Landfill Drum Removal PROJECT: Neuhauser Landfill Drum Removal DE0302/03/02

Photograph No.: 02

**Description:** Freon TF Solvent drum found in Phase 2B.





Photograph No.: 03

**Description:** Packing slip from

pit 2B.







Photograph No.: 04

**Description:** IBM Magnetic Processing Tape Reel





Photograph No.: 05

**Description:** Packing slip from

pit 2B.







DAILY QA/QC REPORT	DFR No. 21
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Tuesday, January 9, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02

Photograph No.: 06

**Description:** Microswitch, Freeport IL label.



Photograph No.: 07

Description: Water filling in the

Phase 2B pit.





DAILY QA/QC REPORT	DFR No. 21
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Tuesday, January 9, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02

Photograph No.: 08

**Description:** Water filling in the Phase 2B pit.





DAILY QA/QC REPORT	DFR NO. 25
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Saturday, January 13, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), ACTENVIRO/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI), STEWART ENVIRONMENTAL	WEATHER: AM: 20s-30s° Fog PM: 40° clear

KEY PERSONNEL ON SITE: GEOSYNTEC: P. MEDLAND; ACT/PSC: H. BUTLER (PM), T. MOORE (GM), B. CARPENTER, M. ARMSTRONG, J. WILLIAMS, C. PEREZ, S. JANDER, D. HUMBLE, K. BEEK, C. HENDEREK, J. JOAB; DS: B. BRADY, T. HOLZFASTER; ERM: A. ESCUREDO, P. MEHRING; SES: P. ANDERSON, A. CADIGAN

#### **CONTRACTOR ACTIVITIES**

Details of Drum Removal Activities:

1. ACT's CAT 308E excavator worked on excavating in the Phase 2B area, and Kobelco SK210 excavator worked on excavating in the Phase 1 area.

#### QA/QC ACTIVITIES - PHASE 1

- 0700: Geosyntec onsite. Tailgate health and safety meeting.
- 0730: ACT mobilizes to Phase 1 area. Uncover stockpiles to prepare for excavation.
- 0815: Geosyntec check in at Phase 1. Waiting for driver to take roll off with carcasses to Front Range Landfill.
- 0920: Begin excavation.
- 1145: Load roll-off with carcasses for transport to Front Range Landfill.
- 1215-1330: Lunch
- 1345: Continue excavation.
- 1630: Finish excavation. 5 total drums removed. One was placed into an overpack RTR-825. The other were empty carcasses.
- 1700: Geosyntec offsite.

#### QA/QC ACTIVITIES - PHASE 2A

Excavations did not take place in this pit today.

#### QA/QC ACTIVITIES - PHASE 2B

- 0700: Geosyntec onsite. Tailgate health and safety meeting.
- 0730: Prepare paperwork, sampling equipment, and calibrate PID.
- 0740: ACT mobilizes to Phase 2B area. Prep roll offs for impacted soils and trash.
- 0800: Geosyntec check in at Phase 2B. ACT about to move impacted soils into two empty roll offs and wait for driver to take roll offs with carcasses to Front Range Landfill.
- 1000: Load roll-off with carcasses for transport to Front Range Landfill.
- 1215-1330: Lunch
- 1345: Prep pit for excavation. Double check drum labels in Drum Containment Area
- 1428: Begin excavation. Unearth trash and debris while excavating soils.
- 1610: Uncover drum RTR-824. PID 12,000 ppm. Filled with black and clear liquid. Since LEL meter's battery was dead, drum left in the ground to be excavated tomorrow.
- 1624: Finish excavation
- 1700: Geosyntec offsite.

#### QA/QC ACTIVITIES - PHASE 3

Excavations did not take place in this pit today.

Drums excavated today:

Phase 1: RTR-825 through RTR-829

Phase 2B: No drums excavated from Phase 2B today.

Prepared By: Patrick Medland

Patril Mules

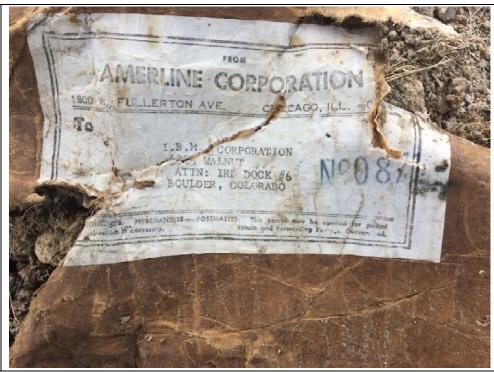


DAILY QA/QC REPORT	DFR NO. 25
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Saturday, January 13, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
DHOTO	

Photograph No.: 01

**Description**: Label on cardboard

found in 2B,





# DAILY QA/QC REPORT PROJECT AND SITE INFORMATION SITE: Neuhauser Landfill, Weld County, CO PROJECT: Neuhauser Landfill Drum Removal PROJECT/PHASE/TASK NO.: DE0302/03/02

Photograph No.: 02

Description: Debris found in

2B.





DAILY QA/QC REPORT	DFR NO. 26
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Sunday, January 14, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
CLIENT: Stratus Redtail Ranch, LLC (Respondent: Richard Dean, Manager)	LOCATION: Erie, CO
CONTRACTORS AND AGENCIES INVOLVED: US ENVIRONMENTAL PROTECTION AGENCY (EPA), ACTENVIRO/PSC (ACT), DS ENVIRONMENTAL (DS) (CABI), STEWART ENVIRONMENTAL	WEATHER: AM: 30° clear PM: 40° clear
KEY DEDSONNEL ON SITE. GEOSVITEC E STOCKWELL ACT/DSC H RITLED (DM) T MOODE (GM) R CADDENTED I WILLIAMS C DEDET S	

KEY PERSONNEL ON SITE: GEOSYNTEC: E. STOCKWELL; ACT/PSC: H. BUTLER (PM), T. MOORE (GM), B. CARPENTER, J. WILLIAMS, C. PEREZ, S JANDER, D. HUMBLE, C. HENDEREK, J. JOAB; DS: B. BRADY, T. HOLZFASTER; ERM: A. ESCUREDO; SES: P. ANDERSON, A. CADIGAN

#### **CONTRACTOR ACTIVITIES**

Details of Drum Removal Activities:

1. ACT's CAT 308E excavator worked on excavating in the Phase 2B area, and Kobelco SK210 excavator worked on excavating in the Phase 1 area.

#### QA/QC ACTIVITIES - PHASE 1

0700: Geosyntec onsite. Tailgate health and safety meeting.

0730: ACT mobilizes to Phase 1 excavation.

1100: Finish excavating visually impacted soil from Phase 1.

1245: E. Stockwell to Phase 1 to check sidewalls and floor PID readings. Approximately every 10 feet of sidewall, dig out soil and insert PID to get reading. Approximately every 10 feet of excavation floor, dig out soil and insert PID to get reading. Sidewall and floor in NW and SE corner of excavation have PID readings over 100ppm.

1400: Begin excavating NW corner of Phase 1 area.

1630: E. Stockwell to Phase 1 to check NW sidewall and floor PID readings.

1645: NW corner sidewall of Phase 1 PID readings are <100ppm. Floor PID readings are still >100ppm. Outline areas in orange spray paint in NW and SE corners where PID readings are >100ppm.

1745: Geosyntec offsite.

#### QA/QC ACTIVITIES - PHASE 2A

Excavations did not take place in this pit today.



consultants	
DAILY QA/QC REPORT	DFR NO. 26
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Sunday, January 14, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
QA/QC ACTIVITIES – PHASE 2B	
0700: Geosyntec onsite. Tailgate health and safety meeting.	
0715: Prepare paperwork, sampling equipment, and calibrate PID.	
0730: ACT mobilizes to Phase 2B excavation.	
0800: After moving soil stockpiles, finish activities in 2B area for the day due t	to lack of personnel trained on supplied air use.
1100: ACT mobilizes to Phase 2B to resume excavations.	
1130: Pumping water out of Phase 2B excavation via vacuum truck.	
1212: Remove drum RTR-824 from excavation and place in overpack.	
1217: T. Holzfaster (DS) finds cardboard box in excavated trash with label "IB	M Systems Manufacturing Division."
1222: Remove drum RTR-920 from excavation and place in overpack.	
1230: Break for lunch.	
1445: E. Stockwell to Phase 2B area.	
1456: Remove drum RTR-923 from excavation. Drum is empty. Crush.	
1513: Remove drum RTR-922 from excavation and place in overpack.	
1532: Remove drum RTR-924 from excavation. Place in plastic overpack due t	o odd shape.
1538: Remove drum RTR-925 from excavation and place in overpack.	
1543: Remove drum RTR-926 from excavation and place in overpack.	
1549: Remove drum RTR-927 from excavation and place in overpack.	
1551: Remove drum RTR-928 from excavation. Drum is empty. Crush.	
1606: Remove drum RTR-929 from excavation. Drum is empty. Crush.	
1614: Remove drum RTR-930 from excavation and place in overpack.	
1618: Remove drum RTR-931 from excavation and place in overpack.	
1622: Remove drum RTR-932 from excavation and place in overpack.	
1625: Remove drum RTR-933 from excavation and place in overpack.	
1627: Vacuum liquid out of base of excavation in area drums were just remove	ed from.
1630: Finish removing drums from Phase 2B for the day. Cleaning up excavati	on.
1745: Geosyntec offsite.	
QA/QC ACTIVITIES – PHASE 3	
Excavations did not take place in this pit today.	

Drums excavated today:

Phase 1: 5 carcasses

Phase 2B: RTR-824, RTR-920 through RTR-933

Prepared By: Emily Stockwell Emily Study



DAILY QA/QC REPORT	DFR NO. 26
PROJECT AND SITE INFORMATION	
SITE: Neuhauser Landfill, Weld County, CO	DATE: Sunday, January 14, 2018
PROJECT: Neuhauser Landfill Drum Removal	PROJECT/PHASE/TASK NO.: DE0302/03/02
РНОТО	

Photograph No.: 01

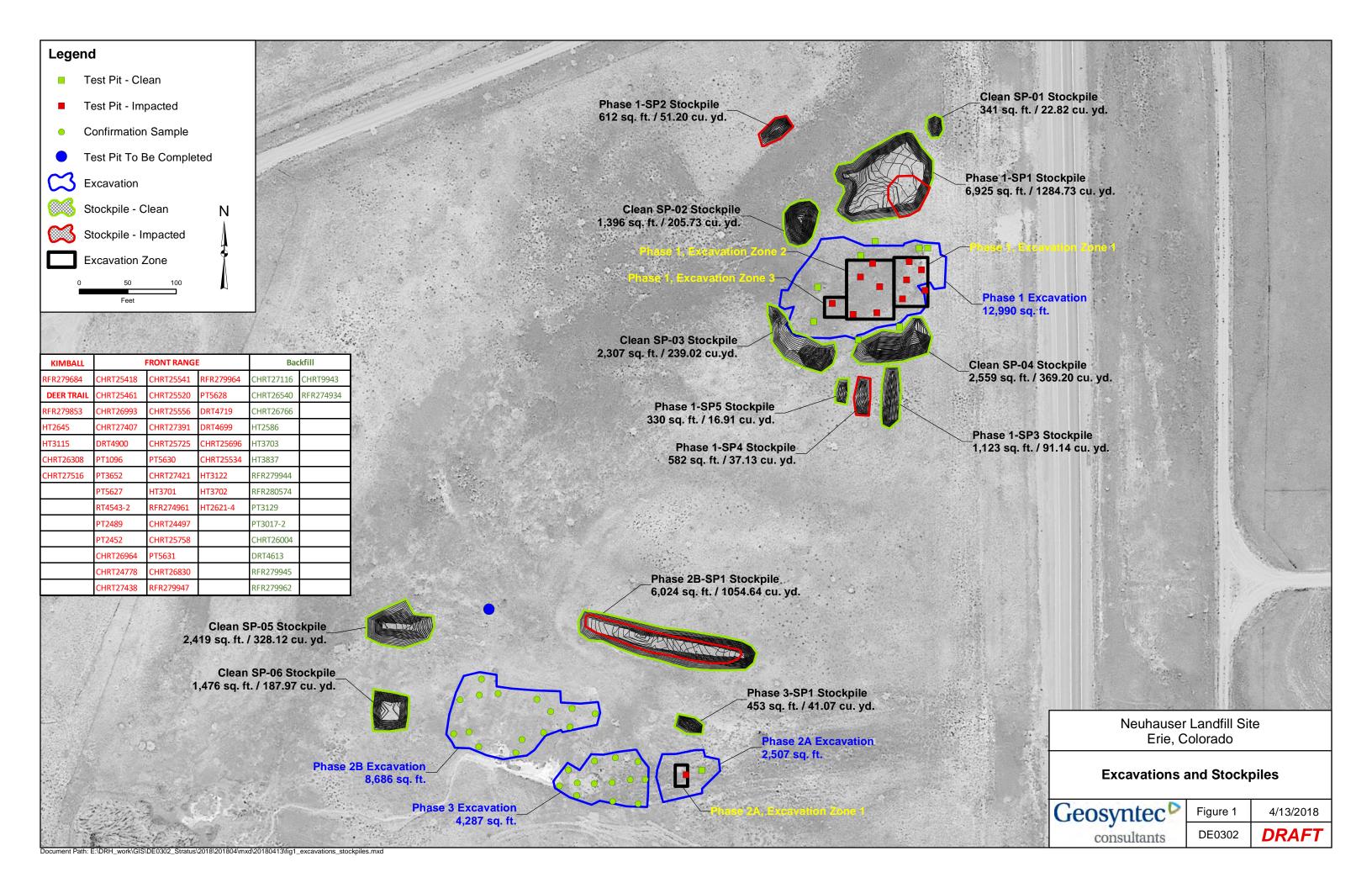
**Description:** Cardboard box found with trash while excavating in Phase 2B. Label says "IBM Systems Manufacturing Division."



Photograph No.: 02

**Description:** SE corner of Phase 1 excavation, floor and sidewall with PID readings >100ppm outlined with orange spray paint.





#### Via Electronic Mail and Overnight Carrier

December 8, 2017

U.S. Environmental Protection Agency Region 8 Attn: Maureen O'Reilly, Enforcement Specialist, (8ENF-RC) 1595 Wynkoop Street Denver, CO 80202-1129

RE: Information Request Letter for Neuhauser Landfill Site, SSID #A8-S6, dated October 2, 2017 ("Request")

Dear Ms. O'Reilly,

This letter serves as Hamilton Sundstrand Corporation's ("HSC") response to the above-referenced CERCLA Section 104(e) Request relating to the Neuhauser Landfill Site ("Site"). Based on our research to date, we surmise that the Request is directed at obtaining information about the former Sundstrand Corporation facility in Denver that was located at 2480 West 70<sup>th</sup> Street ("Denver Facility"). The Denver Facility closed in 2002 and the company sold it and a piece of adjacent property in 2007. As set forth below, we have conducted a good faith search of our records and talked to current and former employees, but have not discovered any information evidencing a nexus between the Denver Facility and the Site. HSC will stay alert for any responsive documents or information and will supplement this response if any become available.

In response to the Request, HSC asserts the following General and Specific objections, privileges and reservations of rights:

#### **General Objections:**

- HSC asserts all applicable privileges it has or may have with regard to EPA's Request, including the attorney-client privilege, the attorney work product doctrine, and privileges for materials that are proprietary, confidential or trade secret.
- 2. HSC objects to the Request on the grounds that the requests and instructions related thereto are overbroad, vague, ambiguous, not relevant and/or unduly burdensome so as to exceed applicable statutory authorities and it is doubtful that a response would be reasonably likely to lead to the discovery of any relevant information.
- 3. HSC objects to any requirement that it produce documents that are already in the possession of EPA or already in the public domain.
- 4. HSC objects to EPA's requests to the extent they require HSC to provide information that is beyond the scope of EPA's authority under Section 104 of CERCLA (42 U.S.C. §9604) and Section 3007 of RCRA (42 U.S.C. §6927); and

- 5. HSC notes that its responses to EPA's requests are qualified as being within its current knowledge after reasonable inquiry, including review of reasonably available documentation within the possession or control of HSC and discussions with knowledgeable individuals who are reasonably available to HSC at this time. HSC has conducted a good faith search for records and employees relating to the former Denver Facility. However, due to the passage of time and the company's document retention policy, certain historical documents may have been destroyed or have become otherwise unavailable. In addition, there are only a limited number of employees still working for HSC who were identified as possibly having knowledge about the matters in the Request. HSC made a good faith effort to locate any relevant documents and obtain information from its employees, but has not located any information connecting the Denver Facility to the Site, either directly or indirectly.
- 6. HSC reserves the right to supplement or correct its responses as new or additional information may become available.
- As with all of our responses, please contact HSC with any further questions that may arise, as it HSC's policy to fully cooperate in good faith with any inquiries by government agencies.

#### Response to 104(e) Request from EPA, Region 8, dated October 2, 2017 (see Attachment A)

#### The following are HSC's responses to EPA's questions 1 through 12 of the Request.

- Kristen Sherman , Assistant General Counsel Hamilton Sundstrand Corporation, a UTC Aerospace Systems Company (UTAS) One Hamilton Road MS 1-1-BC18 Windsor Locks, CT 06092 860-654-5813
- 2. Same as above.
- 3. For questions 1 through 12:

Scott Moyer, UTC Remediation Manager Kristen Sherman, Assistant General Counsel (UTAS) Sara Kerr, Senior Director, EH&S (UTAS) Michelle Buckley, Manager, EHS Divisional Programs – Landing Systems Kathleen McFadden, United Technologies Corporation (UTC) Legal

For questions 6 and 7, the following current UTAS employees were consulted:

Mike Layton, Metallurgist Steven Kaufmann, Associate Director, Engineering Paula Warrell, EH&S Specialist Mike McClelland, Plater Harold Holmes, Plater Tou Vang, Manufacturing Specialist Marcus McClelland, Machinist Frank Price, Machinist Rob Carlson, current EH&S Larry Bud Carlson, EH&S Lewis Scott Frost, EH&S Carl Welton, EH&S

Note: We tried several times to reach Randall Johnston, Senior Engineer Quality, but never connected with him.

- 4. After a search of HSC records, we were unable to find any responsive documents that would enable us to answer the questions contained herein.
  - 5. The present day HSC has its roots in the former Hamilton Standard company. Hamilton Standard was a division of UTC. On February 18, 1999 HSSAIL Inc. was formed as a Delaware corporation and as a UTC subsidiary. On June 10, 1999, all of the outstanding shares of Sundstrand Corporation were merged with and into HSSAIL Inc. and the name of HSSAIL Inc. (the surviving corporation) was changed to "Hamilton Sundstrand Corporation." The assets of the Hamilton Standard division of UTC were contributed as an additional capital contribution by UTC effective January 1, 2000. UTC is the sole voting shareholder of HSC. HSC operates under the name of "UTC Aerospace Systems" or "UTAS". UTAS is not a separately incorporated legal entity. Without an appropriate confidentiality agreement or protective order, HSC is not able to produce copies of the underlying deal documents at this time.
- 6. After a search of HSC's files and interviews of current and former employees (see names listed in questions 3 and 12), we were unable to find any people with knowledge of handling of waste materials, including any materials given, sold, transferred, transported or shipped by HSC to the Site between 1965 and 1991.
- 7. After a search of HSC's files and interviews of current and former employees (see names listed in questions 3 and 12), we were unable to find any relevant files that are responsive to this question.
- 8. After a search of HSC's files and interviews of current and former employees (see names listed in questions 3 and 12), we were unable to find any relevant files that are responsive to this question.
- 9. After a search of HSC's files and interviews of current and former employees (see names listed in questions 3 and 12), we were unable to find any relevant information that is responsive to this question.
- 10. After a search of HSC's files and interviews of current and former employees (see names listed in questions 3 and 12), we were unable to find any relevant files that are responsive to this question.

- 11. After a search of HSC's files and interviews of current and former employees (see names listed in questions 3 and 12), we were unable to find any relevant information that is responsive to this question.
- 12. We know of no other individuals who would be able to respond to these questions. During the course of our interviews of current employees, the following names of former employees were mentioned as persons who may have knowledge of waste handling practices at the former Denver Facility:

Bud Covalt, former employee who maintained waste water treatment plant Jim Rost, former Safety Director Don Abbott, former Plant Manager James Jones, former Facilities Manager.

We were able to reach two of these four former employees and neither Don Abbott nor James ("Jimmy") Jones had ever heard of the Site or the Pratt Landfill. On the contrary, Mr. Abbott worked at the Denver facility from 1973 to 1991, and again from 2000 to 2004, when he served as Plant Manager. During the time that Mr. Abbott was Plant Manager, he stated that, to his knowledge, the Denver facility only used the Lowry Landfill for waste disposal. Mr. Abbott had no knowledge regarding waste disposal practices prior to 2000. Mr. Jones worked at the Denver Facility from 1967 to 2000. In the early years, he was in the drafting and engineering departments and had no knowledge of waste disposal practices. In the 80's and 90's, Mr. Jones worked as the Facilities Manager and thus worked closely with the environmental professionals. He did not have any recollection of the Site.

#### Conclusion

Based on the foregoing, to the best of our current information and belief, the Denver Facility did not cause or contribute to contamination at the Site. Nevertheless, should you have further questions or wish to discuss this response, please do not hesitate to contact me directly at (860) 654-5813.

Very truly yours,

KRISTEN W. SHERMAN

W. A

#### NOTARIZED CERTIFICATE

- I, Kristen Sherman, having been duly sworn and being of legal age, hereby state:
  - 1. I am the person authorized by Hamilton Sundstrand to respond to the Environmental Protection Agency's request for information concerning the Neuhauser Landfill Site located in Weld County, Colorado.
  - 2. I have made a complete and thorough review of all documents, information, and sources relevant to the request.
  - 3. I hereby certify that the attached response to the EPA's request is complete and contains all information and documents responsive to the request.

Signature: / W. //

Name: Kristen W. Sherman Title: Assistant General Counsel

**SEAL** 

Subscribed and sworn to me this $\frac{\mathcal{S}^{\mathcal{A}}}{\mathcal{A}}$ day of $\underline{\underline{\mathcal{A}}}$ Consider the Notary Public	_, 2017
My Commission Expires 4/28/18	
My address is 70 W. Madison St., Suite 2900	
Chicago, 12 60602	
$\omega$	

LINDA A. KELLY
OFFICIAL SEAL
Notary Public - State of Illinois
My Commission Expires
April 28, 2018

2017 NOV 28 PM 2: 50

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 8



IN THE MATTER OF:

Neuhauser Landfill, Erie, Weld County, Colorado

Stratus Redtail Ranch LLC

Respondent

Proceeding Under Sections 104, 106(a), 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622

CERCLA Docket No. CERCLA-08-2018-0002

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMOVAL ACTIONS

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#### I. JURISDICTION AND GENERAL PROVISIONS

- 1. This Administrative Settlement Agreement and Order on Consent (Settlement) is entered into voluntarily by the United States Environmental Protection Agency (EPA) and Stratus Redtail Ranch, LLC (Respondent). This Settlement provides for the performance of a drum removal action by Respondent and the payment of certain response costs incurred by the United States at or in connection with the "Neuhauser Landfill Site" (the Site) generally located near the southwest corner of the intersection of Weld County Roads 5 and 6 in Erie, Colorado, and more specifically identified in the Work Plan.
- 2. This Settlement is issued under the authority vested in the President of the United States by Sections 104, 106(a), 107, and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9604, 9606(a), 9607 and 9622 (CERCLA). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2923 (Jan. 29, 1987), and further delegated to Regional Administrators by EPA Delegation Nos. 14-14A (Determinations of Imminent and Substantial Endangerment, Jan. 31, 2017), 14-14C (Administrative Actions through Consent Orders, Jan. 18, 2017) and 14-14D (Cost Recovery Non-Judicial Agreements and Administrative Consent Orders, Jan. 18, 2017). This authority was further redelegated by the Regional Administrator of EPA Region 8 to the Assistant Regional Administrator for the office of Enforcement, Compliance, and Environmental Justice.
- 3. EPA has notified the State of Colorado (the State) of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
- 4. EPA and Respondent recognize that this Settlement has been negotiated in good faith and that the actions undertaken by Respondent in accordance with this Settlement do not constitute an admission of any liability. Respondent does not admit, and retains the right to controvert in any subsequent proceedings other than proceedings to implement or enforce this Settlement, the validity of the findings of facts, conclusions of law, and determinations in Sections IV (Findings of Fact) and V (Conclusions of Law and Determinations) of this Settlement. Respondent agrees to comply with and be bound by the terms of this Settlement and further agree that it will not contest the basis or validity of this Settlement or its terms.
- 5. Respondent represents that, prior to acquisition of the Site, it engaged a qualified environmental professional to perform a Phase 1 environmental study. Respondent retains the right to assert in any subsequent proceeding, other an proceedings to implement or enforce this Settlement, that it qualifies as a bona fide prospective purchaser in accordance with the provisions of CERCLA sections 101(40)(A)-(H) and 107(r)(1), 42 U.S.C. §§ 9601(A)-(H) and 9607(r)(1).

#### II. PARTIES BOUND

6. This Settlement is binding upon EPA and upon Respondent and its successors, and assigns. Any change in ownership or corporate status of Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter Respondent's responsibilities under this Settlement.

- 7. Each undersigned representative of Respondent certifies that he or she is fully authorized to enter into the terms and conditions of this Settlement and to execute and legally bind Respondent to this Settlement.
- 8. Respondent shall provide a copy of this Settlement to each contractor hired to perform the Work required by this Settlement and to each person representing Respondent with respect to the Site or the Work, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Settlement. Respondent or its contractors shall provide written notice of the Settlement to all subcontractors hired to perform any portion of the Work required by this Settlement. Respondent shall nonetheless be responsible for ensuring that its contractors and subcontractors perform the Work in accordance with the terms of this Settlement.

#### III. DEFINITIONS

9. Unless otherwise expressly provided in this Settlement, terms used in this Settlement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Settlement or its attached appendices, the following definitions shall apply:

"Affected Property" shall mean all real property at the Site and any other real property where EPA determines, at any time, that access or land, water, or other resource use restrictions are needed to implement the drum removal action, including, but not limited to, the area in the vicinity of the southwest corner of the intersection of Weld County Roads 5 and 6, more particularly shown in the map within the Work Plan.

"CDPHE" shall mean the Colorado Department of Public Health and Environment and any successor departments or agencies of the State.

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

"Day" or "day" shall mean a calendar day. In computing any period of time under this Settlement, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

"Effective Date" shall mean the effective date of this Settlement as provided in Section XXIX.

"EPA" shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

"EPA Hazardous Substance Superfund" shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.

"Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing deliverables

submitted pursuant to this Settlement, in overseeing implementation of the Work, or otherwise implementing, overseeing, or enforcing this Settlement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Section IX (Property Requirements) (including, but not limited to, cost of attorney time and any monies paid to secure or enforce access or land, water, or other resource use restrictions, including, but not limited to, the amount of just compensation), Section XIII (Emergency Response and Notification of Releases), Paragraph 78 (Work Takeover), , Paragraph 31 (Community Involvement Plan) community involvement (including, but not limited to, the costs of any technical assistance grant under Section 117(e) of CERCLA, 42 U.S.C. § 9617(e), Section XV (Dispute Resolution), and all litigation costs. Future Response Costs shall also include Agency for Toxic Substances and Disease Registry (ATSDR) costs regarding the Site.

"Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at <a href="https://www.epa.gov/superfund/superfund-interest-rates">https://www.epa.gov/superfund/superfund-interest-rates</a>.

"National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

"Owner Respondent" shall mean any Respondent that owns or controls any Affected Property, including Stratus Redtail Ranch LLC. The clause "Owner Respondent's Affected Property" means Affected Property owned or controlled by Owner Respondent.

"Paragraph" shall mean a portion of this Settlement identified by an Arabic numeral or an upper or lower case letter.

"Parties" shall mean EPA and Respondent.

"Post-Removal Site Control" shall mean actions necessary to ensure the effectiveness and integrity of the drum removal action to be performed pursuant to this Settlement consistent with Sections 300.415(*l*) and 300.5 of the NCP and "Policy on Management of Post-Removal Site Control" (OSWER Directive No. 9360.2-02, Dec. 3, 1990).

"RCRA" shall mean the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992 (also known as the Resource Conservation and Recovery Act).

"Respondent" shall mean Stratus Redtail Ranch LLC.

"Section" shall mean a portion of this Settlement identified by a Roman numeral.

"Settlement" shall mean this Administrative Settlement Agreement and Order on Consent and all appendices attached hereto (listed in Section XXVIII (Integration/Appendices)). In the event of conflict between this Settlement and any appendix, this Settlement shall control.

"Site" shall mean the Neuhauser Landfill Site, encompassing approximately 35 acres, located in the area in the vicinity of the southwest corner of the intersection of Weld County Roads 5 and 6 and depicted generally on the map within the Work Plan.

"Neuhauser Landfill Special Account" shall mean the special account within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

"State" shall mean the State of Colorado.

"Transfer" shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

"United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

"Waste Material" shall mean (a) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (d) any "hazardous material" under Colorado law.

"Work" shall mean all activities and obligations Respondent is required to perform under this Settlement except those required by Section XI (Record Retention).

#### IV. FINDINGS OF FACT

- 10. The Site was operated in the 1960s by Sanitation Engineering, Inc., and its principal, John Neuhauser.
- 11. From approximately 1965 until 1968, the operator of the Site contracted with various entities for the disposal of waste material, which was disposed of at the Site.
  - 12. In 2015, Respondent purchased the Site property for residential development.
- 13. Thereafter, Respondent conducted additional environmental studies, including groundwater investigations that were submitted to CDPHE.
- 14. Groundwater reports at the Site show levels of trichloroethylene (TCE), cis-1,2 dichloroethylene, methyl ethyl ketone (MEK), and toluene in groundwater, indicating some contents from the drums may have been released into groundwater.
- 15. CDPHE conducted a review of its historical documents and concluded that the Site was used as a landfill location for drum waste.

- 16. In January 2017 and in July 2017, Respondent conducted additional investigation at the Site and found buried drums with liquids still inside. Samples of the liquids showed the presence of methyl ethyl ketone (MEK), toluene, 4-methyl-2-pentanone (MIBK) and trichloroethylene (TCE).
- 17. Drums were found in at least two areas on-Site a few inches below ground surface. In some instances, strong solvent odors existed as the drums were exposed, indicating that a release of the drums' contents may have occurred.
  - 18. MEK, toluene, MIBK, TCE, and cis-1,2 DCE are hazardous substances.

#### V. CONCLUSIONS OF LAW AND DETERMINATIONS

- 19. Based on the Findings of Fact set forth above, and the administrative record, EPA has determined that:
- a. The Neuhauser Landfill Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
- b. The contamination found at the Site, as identified in the Findings of Fact above, includes "hazardous substance(s)" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).
- c. Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 . U.S.C. § 9601(21).
- d. Respondent is a responsible party under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
  - (1) Respondent is the "owner" of the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).
- e. The conditions described in the Findings of Fact above constitute an actual or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).
- f. The conditions described in the Findings of Fact above may constitute an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from the facility within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
- g. The removal action required by this Settlement is necessary to protect the public health, welfare, or the environment and, if carried out in compliance with the terms of this Settlement, will be consistent with the NCP, as provided in Section 300.700(c)(3)(ii) of the NCP.

#### VI. SETTLEMENT AGREEMENT AND ORDER

20. Based upon the Findings of Fact, Conclusions of Law, and Determinations set forth above, and the administrative record, it is hereby Ordered and Agreed that Respondent shall comply with all provisions of this Settlement, including, but not limited to, all appendices to this Settlement and all documents incorporated by reference into this Settlement.

#### VII. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR

- Respondent shall retain one or more contractors or subcontractors to perform the 21. Work and shall notify EPA of the names, titles, addresses, telephone numbers, email addresses, and qualifications of such contractors or subcontractors within 7 days after the Effective Date. Respondent shall also notify EPA of the names, titles, contact information, and qualifications of any other contractors or subcontractors retained to perform the Work at least 7 days prior to commencement of such Work. EPA retains the right to disapprove of any or all of the contractors and/or subcontractors retained by Respondent. If EPA disapproves of a selected contractor or subcontractor, Respondent shall retain a different contractor or subcontractor and shall notify EPA of that contractor's or subcontractor's name, title, contact information, and qualifications within 7 days after EPA's disapproval. With respect to any proposed contractor, Respondent shall demonstrate that the proposed contractor demonstrates compliance with ASO/ANSI E4:2014 "Quality management systems for environmental information and technology programs - Requirements with guidance for use" (American Society for Quality, February 2014), by submitting a copy of the proposed contractor's Quality Management Plan (OMP). The OMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, Reissued May 2006) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondent shall be subject to EPA's review for verification based on objective assessment criteria (e.g., experience, capacity, technical expertise) and that they do not have a conflict of interest with respect to the project.
- 22. Within 7 days after the Effective Date, Respondent shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondent required by this Settlement and shall submit to EPA the designated Project Coordinator's name, title, address, telephone number, email address, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site work. EPA retains the right to disapprove of the designated Project Coordinator who does not meet the requirements of Paragraph 21. If EPA disapproves of the designated Project Coordinator, Respondent shall retain a different Project Coordinator and shall notify EPA of that person's name, title, contact information, and qualifications within 7 days following EPA's disapproval. Notice or communication relating to this Settlement from EPA to Respondent's Project Coordinator shall constitute notice or communication to all Respondent.
- 23. EPA has designated Joyce Ackerman of the Region 8 Emergency Response Unit, as its On-Scene Coordinator (OSC). EPA and Respondent shall have the right, subject to Paragraph 22, to change their respective designated OSC or Project Coordinator. Respondent

shall notify EPA 7 days before such a change is made. The initial notification by Respondent may be made orally, but shall be promptly followed by a written notice.

24. The OSC shall be responsible for overseeing Respondent's implementation of this Settlement. The OSC shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Settlement, or to direct any other removal action undertaken at the Site. Absence of the OSC from the Site shall not be cause for stoppage of work unless specifically directed by the OSC.

#### VIII. WORK TO BE PERFORMED

- 25. Respondent shall perform, at a minimum, all actions necessary to implement the Work Plan. The actions to be implemented generally include, but are not limited to, the following:
- a. Excavations shall be conducted in areas of suspected buried drums as identified in Respondent's July 2017 geophysical investigations. All drums found shall be removed from the subsurface, whether empty or with contents. Leaking drums shall be overpacked to prevent further releases.
- b. Removal of the approximately 2,000 cubic yards of contaminated soils in the vicinity of SEC MW-2, referenced in Section 3.6 of the Stewart Environmental Consulting Group LLC Revised Report on Nature and Extent Investigation at the Stratus Redtail Ranch, LLC, Erie, Colorado (May 10, 2017).
- c. Drums and highly contaminated soils shall be sampled and characterized for disposal purposes. Drums and highly contaminated soils shall be safely stored while laboratory results and disposal arrangements are pending, either in a locked storage container on-Site, a locked, fenced area off-Site, or other equivalent storage arrangement with the approval of EPA.
- d. Drums and highly contaminated soils shall be transported off-Site for proper final disposal at a facility(ies) which is/are in compliance with the CERCLA off-site rule (40 CFR Section 300.440) that are allowed to accept the drums and highly contaminated soils. Drums and highly contaminated soils shall be transported off-Site as soon as practicable but no less than 30 calendar days after excavation.
- e. All areas of excavation shall be documented with GPS coordinates and provide an inventory of numbers and contents of drums. During the work, measures shall be taken to minimize emissions of volatile organic compounds to potential receptors nearby, such as covering the open excavation areas with soils.
- 26. For any regulation or guidance referenced in the Settlement, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Respondent receives notification from EPA of the modification, amendment, or replacement.

#### 27. Work Plan and Implementation

- a. Within 7 days after the Effective Date, in accordance with Paragraph 28 (Submission of Deliverables), Respondent shall submit to EPA for approval a draft work plan for performing the removal action (the Removal Work Plan) generally described in Paragraph 25 above. The draft Removal Work Plan shall provide a description of, and an expeditious schedule for, the actions required by this Settlement.
- b. EPA may approve, disapprove, require revisions to, or modify the draft Removal Work Plan in whole or in part. If EPA requires revisions, Respondent shall submit a revised draft Removal Work Plan within 7 days after receipt of EPA's notification of the required revisions. Respondent shall implement the Removal Work Plan as approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Removal Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Settlement.
- c. Upon approval or approval with modifications of the Removal Work Plan Respondent shall commence implementation of the Work in accordance with the schedule included therein. Respondent shall not commence or perform any Work except in conformance with the terms of this Settlement.
- d. Unless otherwise provided in this Settlement, any additional deliverables that require EPA approval under Work Plan shall be reviewed and approved by EPA in accordance with this Paragraph.

#### 28. Submission of Deliverables

#### a. General Requirements for Deliverables

- (1) Except as otherwise provided in this Settlement, Respondent shall direct all submissions required by this Settlement to the OSC at Joyce Ackerman, EPR-ER, 1595 Wynkoop St. Denver, CO 80202, ackerman.joyce@epa.gov. Respondent shall submit all deliverables required by this Settlement, or any approved work plan to EPA in accordance with the schedule set forth in such plan.
- (2) Respondent shall submit all deliverables in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in Paragraph 28.b. All other deliverables shall be submitted to EPA in the form specified by the OSC. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5 x 11 inches, Respondent shall also provide EPA with paper copies of such exhibits.

#### b. Technical Specifications for Deliverables

(1) Sampling and monitoring data should be submitted in standard Regional Electronic Data Deliverable (EDD) format. Other delivery methods may

be allowed if electronic direct submission presents a significant burden or as technology changes.

- (2) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (a) in the ESRI File Geodatabase format; and (b) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <a href="https://edg.epa.gov/EME/">https://edg.epa.gov/EME/</a>.
- (3) Each file must include an attribute name for each site unit or subunit submitted. Consult <a href="https://www.epa.gov/geospatial/geospatial-policies-and-standards">https://www.epa.gov/geospatial/geospatial-policies-and-standards</a> for any further available guidance on attribute identification and naming.
- (4) Spatial data submitted by Respondent does not, and is not intended to, define the boundaries of the Site.
- 29. **Health and Safety Plan.** Within 7 days after the Effective Date, Respondent shall submit for EPA review and comment a plan that ensures the protection of the public health and safety during performance of on-site work under this Settlement. This plan shall be prepared in accordance with "OSWER Integrated Health and Safety Program Operating Practices for OSWER Field Activities," Pub. 9285.0-OIC (Nov. 2002), available on the NSCEP database at <a href="https://www.epa.gov/nscep">https://www.epa.gov/nscep</a>, and "EPA's Emergency Responder Health and Safety Manual," OSWER Directive 9285.3-12 (July 2005 and updates), available at <a href="https://www.epaosc.org/">https://www.epaosc.org/</a> HealthSafetyManual/manual-index.htm. In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration (OSHA) regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the removal action.

#### 30. Quality Assurance, Sampling, and Data Analysis

a. Respondent shall use quality assurance, quality control, and other technical activities and chain of custody procedures for all samples consistent with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" EPA/240/B-01/003 (March 2001, reissued May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)" EPA/240/R-02/009 (December 2002), and "Uniform Federal Policy for Quality Assurance Project Plans," Parts 1-3, EPA/505/B-04/900A-900C (March 2005).

- b. Within 7 days after the Effective Date, Respondent shall submit a Sampling and Analysis Plan to EPA for review and approval. This plan shall consist of a Field Sampling Plan (FSP) and a Quality Assurance Project Plan (QAPP) that is consistent with the Removal Work Plan, the NCP and applicable guidance documents, including, but not limited to, "Guidance for Quality Assurance Project Plans (QA/G-5)" EPA/240/R-02/009 (December 2002), "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" EPA 240/B-01/003 (March 2001, reissued May 2006), and "Uniform Federal Policy for Quality Assurance Project Plans," Parts 1-3, EPA/505/B-04/900A-900C (March 2005). Upon its approval by EPA, the Sampling and Analysis Plan shall be incorporated into and become enforceable under this Settlement.
- Respondent shall ensure that EPA and State personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Respondent in implementing this Settlement. In addition, Respondent shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance, quality control, and technical activities that will satisfy the stated performance criteria as specified in the QAPP and that sampling and field activities are conducted in accordance with the Agency's "EPA QA Field Activities Procedure," CIO 2105-P-02.1 (9/23/2014) available at http://www.epa.gov/irmpoli8/epa-qa-field-activities-procedures. Respondent shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Settlement meet the competency requirements set forth in EPA's "Policy to Assure Competency of Laboratories, Field Sampling, and Other Organizations Generating Environmental Measurement Data under Agency-Funded Acquisitions" available at http://www.epa.gov/measurements/documents-aboutmeasurement-competency-under-acquisition-agreements and that the laboratories perform all analyses according to accepted EPA methods. Accepted EPA methods consist of, but are not limited to, methods that are documented in the EPA's Contract Laboratory Program (http://www.epa.gov/clp), SW 846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (https://www.epa.gov/hw-sw846), "Standard Methods for the Examination of Water and Wastewater" (http://www.standardmethods.org/), 40 C.F.R. Part 136, "Air Toxics - Monitoring Methods" (http://www3.epa.gov/ttnamti1/airtox.html).
- However, upon approval by EPA, Respondent may use other appropriate analytical method(s), as long as (i) quality assurance/quality control (QA/QC) criteria are contained in the method(s) and the method(s) are included in the QAPP, (ii) the analytical method(s) are at least as stringent as the methods listed above, and (iii) the method(s) have been approved for use by a nationally recognized organization responsible for verification and publication of analytical methods, e.g., EPA, ASTM, NIOSH, OSHA, etc. Respondent shall ensure that all laboratories they use for analysis of samples taken pursuant to this Settlement have a documented Quality System that complies with ASO/ANSI E4:2014 "Quality management systems for environmental information and technology programs - Requirements with guidance for use" (American Society for Quality, February 2014), and "EPA Requirements for Quality Management Plans (QA/R-2)" EPA/240/B-01/002 (March 2001, reissued May 2006), or equivalent documentation as determined by EPA. EPA may consider Environmental Response Laboratory Network (ERLN) laboratories, laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP), or laboratories that meet International Standardization Organization (ISO 17025) standards or other nationally recognized programs as meeting the Quality System requirements. Respondent shall ensure that all field

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methodologies utilized in collecting samples for subsequent analysis pursuant to this Settlement are conducted in accordance with the procedures set forth in the QAPP approved by EPA.

- e. Upon request, Respondent shall provide split or duplicate samples to EPA or its authorized representatives. Respondent shall notify EPA not less than 7 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall provide to Respondent split or duplicate samples of any samples it takes as part of EPA's oversight of Respondent's implementation of the Work.
- f. Respondent shall submit to EPA the results of all sampling and/or tests or other data obtained or generated by or on behalf of Respondent with respect to the Site and/or the implementation of this Settlement. Respondent shall submit to EPA the results of all waste characterization sampling (i.e., samples of drum contents and highly contaminated soils) within 4 days of receipt from the laboratory.
- g. Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance or oversight of the Work that has been verified according to the QA/QC procedures required by the Settlement or any EPA-approved Work Plans or Sampling and Analysis Plans. If Respondent objects to any other data relating to the Work, Respondent shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days after the monthly progress report containing the data.
- 21. Community Involvement Plan. In coordination with CDPHE and Respondent, EPA will prepare a community involvement plan, in accordance with EPA guidance and the NCP. If requested by EPA, Respondent shall participate in community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondent's support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to (1) any community advisory groups, (2) any technical assistance grant recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. All community involvement activities conducted by Respondent at EPA's request are subject to EPA's oversight. Upon EPA's request, Respondent shall establish a community information repository at or near the Site to house one copy of the administrative record.
- 32. **Progress Reports**. Respondent shall submit a written progress report to EPA concerning actions undertaken pursuant to this Settlement on a monthly basis, or as otherwise requested by EPA, from the date of receipt of EPA's approval of the Removal Work Plan until issuance of Notice of Completion of Work pursuant to Section XXVII, unless otherwise directed in writing by the OSC. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting

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period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated problems.

33. Final Report. Within 60 days after completion of all Work required by this Settlement, other than continuing obligations listed in Paragraph 100 (notice of completion). Respondent shall submit for EPA review and approval a final report summarizing the actions taken to comply with this Settlement. The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports." The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Settlement, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal action (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a responsible corporate official of Respondent or Respondent's Project Coordinator: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

#### 34. Off-Site Shipments

- a. Respondent may ship hazardous substances, pollutants and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent will be deemed to be in compliance with CERCLA Section 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondent obtains a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- b. Respondent may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide written notice to the appropriate state environmental official in the receiving facility's state and to the OSC. This written notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondent also shall notify the state environmental official referenced above and the OSC of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondent shall provide the written notice after the award of the contract for the removal action and before the Waste Material is shipped.

c. Respondent may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the Action Memorandum. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 C.F.R. § 261.4(e) shipped off-Site for treatability studies, are not subject to 40 C.F.R. § 300.440.

#### IX. PROPERTY REQUIREMENTS

- 35. Respondent shall, with respect to Affected Property: (i) provide the EPA, the State, their representatives, contractors, and subcontractors with access at all reasonable times to such Affected Property to conduct any activity regarding the Settlement, including those activities listed in Paragraph 35.a (Access Requirements); and (ii) refrain from using such Affected Property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material, or interfere with or adversely affect the implementation, integrity, or protectiveness of the removal action, including the restrictions listed in Paragraph 35.a(11) (Land, Water, or Other Resource Use Restrictions).
- a. **Access Requirements**. The following is a list of activities for which access is required regarding the Affected Property:
  - (1) Monitoring the Work;
  - (2) Verifying any data or information submitted to the United States or the State:
  - (3) Conducting investigations regarding contamination at or near the Site;
    - (4) Obtaining samples;
  - (5) Assessing the need for, planning, implementing, or monitoring response actions;
  - (6) Assessing implementation of quality assurance and quality control practices as defined in the approved quality assurance quality control plan as defined in the approved QAPP;
  - (7) Implementing the Work pursuant to the conditions set forth in Paragraph 78 (Work Takeover);
  - (8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Respondent or its agents, consistent with Section X (Access to Information);
    - (9) Assessing Respondent's compliance with the Settlement;

- (10) Determining whether the Affected Property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the Settlement; and
- (11) Implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions regarding the Affected Property.
- 36. If EPA determines in a decision document prepared in accordance with the NCP that institutional controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are needed, Respondent shall cooperate with EPA's and the State's efforts to secure and ensure compliance with such institutional controls.
- 37. In the event of any Transfer of the Affected Property, unless EPA otherwise consents in writing, Respondent shall continue to comply with its obligations under the Settlement, including their obligation to secure access and ensure compliance with any land, water, or other resource use restrictions regarding the Affected Property.
- 38. Notwithstanding any provision of the Settlement, EPA and the State retain all of their access authorities and rights, as well as all of their rights to require land, water, or other resource use restrictions, including enforcement authorities related thereto under CERCLA, RCRA, and any other applicable statute or regulations.

#### X. ACCESS TO INFORMATION

39. Respondent shall provide to EPA, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as Records) within Respondent's possession or control or that of its contractors or agents relating to activities at the Site or to the implementation of this Settlement, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Work. Respondent shall also make available to EPA, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

#### 40. Privileged and Protected Claims

- a. Respondent may assert all or part of a Record requested by EPA or the State is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondent complies with Paragraph 40.b, and except as provided in Paragraph 40.c.
- b. If Respondent asserts such a privilege or protection, it shall provide EPA with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, Respondent shall provide the Record to EPA and the State in redacted form to mask the privileged or protected portion only.

Respondent shall retain all Records that it claims to be privileged or protected until EPA and the State have had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Respondent's favor.

- c. Respondent may make no claim of privilege or protection regarding: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological, or engineering data, or the portion of any other Record that evidences conditions at or around the Site; or (2) the portion of any Record that Respondent is required to create or generate pursuant to this Settlement.
- 41. **Business Confidential Claims**. Respondent may assert that all or part of a Record provided to EPA under this Section or Section XI (Record Retention) is business confidential to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Respondent shall segregate and clearly identify all Records or parts thereof submitted under this Settlement for which Respondent asserts business confidentiality claims. Records that Respondent claims to be confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA and the State, or if EPA has notified Respondent that the Records are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Respondent.
- 42. Notwithstanding any provision of this Settlement, EPA retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

#### XI. RECORD RETENTION

- 43. Until ten (10) years after EPA provides Respondent with notice, pursuant to Section XXVII (Notice of Completion of Work), that all Work has been fully performed in accordance with this Settlement, Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control, or that come into its possession or control, that relate in any manner to its liability under CERCLA with regard to the Site, provided, however, that Respondent must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in their possession or control or that come into their possession or control that relate in any manner to the performance of the Work, provided, however, that Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.
- 44. At the conclusion of the document retention period, Respondent shall notify EPA and the State at least 90 days prior to the destruction of any such Records, and, upon request by

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EPA or the State, and except as provided in Paragraph 40 (Privileged and Protected Claims), Respondent shall deliver any such Records to EPA.

45. Respondent certifies that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by EPA or the State and that it has fully complied with any and all EPA and State requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927, and state law.

#### XII. COMPLIANCE WITH OTHER LAWS

- 46. Nothing in this Settlement limits Respondent's obligations to comply with the requirements of all applicable state and federal laws and regulations, except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-site actions required pursuant to this Settlement shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental or state environmental or facility siting laws.
- 47. No local, state, or federal permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work), including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work that is not on-site requires a federal or state permit or approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. Respondent may seek relief under the provisions of Section XVI (Force Majeure) for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval required for the Work, provided that it has submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals. This Settlement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

#### XIII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

48. **Emergency Response**. If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release. Respondent shall take these actions in accordance with all applicable provisions of this Settlement, including, but not limited to, the Health and Safety Plan. Respondent shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer at 303-293-1788 of the incident or Site conditions. In the event that Respondent fails to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondent shall reimburse EPA for all costs

of such response action not inconsistent with the NCP pursuant to Section XIV (Payment of Response Costs).

- 49. **Release Reporting**. Upon the occurrence of any event during performance of the Work that Respondent is required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondent shall immediately orally notify the OSC or, in the event of her unavailability, the Regional Duty Officer at 303-312-6510, and the National Response Center at (800) 424-8802. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004.
- 50. For any event covered under this Section, Respondent shall submit a written report to EPA within 7 days after the onset of such event, setting forth the action or event that occurred and the measures taken, and to be taken, to mitigate any release or threat of release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release or threat of release.

#### XIV. PAYMENT OF RESPONSE COSTS

- 51. **Payments for Future Response Costs**. Respondent shall pay to EPA all Future Response Costs not inconsistent with the NCP.
- a. **Periodic Bills**. On a periodic basis, EPA will send Respondent an electronic billing notification to the following email address:

rdean@stratuscompanies.com

The billing notification will include a standard regionally-prepared cost report with the direct and indirect costs incurred by EPA and its contractors. Respondent shall make all payments within 30 days of receipt of the electronic bill, except otherwise provided in Paragraph 54 of this Settlement Agreement. Respondent shall make payments using one of the payment methods set forth in the electronic billing notification.

52. Respondent may change its billing address by providing notice of the new address to:

Financial Management Officer U.S. EPA Region 8 (TMS-FMP) 1595 Wynkoop St. Denver, CO 80202

a. **Deposit of Future Response Costs Payments** The total amount to be paid by Respondent pursuant to Paragraph 51.a (Periodic Bills) shall be deposited by EPA in the Neuhauser Landfill Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund, provided, however, that EPA may deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund if, at the time the payment is

received, EPA estimates that the Neuhauser Special Account balance is sufficient to address currently anticipated future response actions to be conducted or financed by EPA at or in connection with the Site. Any decision by EPA to deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund for this reason shall not be subject to challenge by Respondent pursuant to the dispute resolution provisions of this Settlement or in any other forum.

- 53. Interest. In the event that any payment for Future Response Costs is not made by the date required, Respondent shall pay Interest on the unpaid balance. The Interest on Future Response Costs shall begin to accrue on the date of the bill. The Interest shall accrue through the date of Respondent's payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondent's failure to make timely payments under this Section, including but not limited to, payment of stipulated penalties pursuant to Section XVII (Stipulated Penalties).
- Contesting Future Response Costs. Respondent may initiate the procedures of Section XV (Dispute Resolution) regarding payment of any Future Response Costs billed under Paragraph 51 (Payments for Future Response Costs) if they determine that EPA has made a mathematical error or included a cost item that is not within the definition of Future Response Costs, or if it believes EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. To initiate such dispute, Respondent shall submit a Notice of Dispute in writing to the OSC within 30 days after receipt of the bill. Any such Notice of Dispute shall specifically identify the contested Future Response Costs and the basis for objection. If Respondent submits a Notice of Dispute, Respondent shall within the 30-day period, also as a requirement for initiating the dispute, (a) pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 51, and (b) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the Federal Deposit Insurance Corporation (FDIC) and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondent shall send to the OSC a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. If EPA prevails in the dispute, within 5 days after the resolution of the dispute, Respondent shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 51. If Respondent prevails concerning any aspect of the contested costs, Respondent shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to EPA in the manner described in Paragraph 51. Respondent shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondent's obligation to reimburse EPA for its Future Response Costs.

#### XV. DISPUTE RESOLUTION

55. Unless otherwise expressly provided for in this Settlement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under

this Settlement. The Parties shall attempt to resolve any disagreements concerning this Settlement expeditiously and informally.

- 56. **Informal Dispute Resolution**. If Respondent objects to any EPA action taken pursuant to this Settlement, including billings for Future Response Costs, it shall send EPA a written Notice of Dispute describing the objection(s) within 7 days after such action. EPA and Respondent shall have 30 days from EPA's receipt of Respondent's Notice of Dispute to resolve the dispute through informal negotiations (the Negotiation Period). The Negotiation Period may be extended at the sole discretion of EPA. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Settlement.
- 57. **Formal Dispute Resolution**. If the Parties are unable to reach an agreement within the Negotiation Period, Respondent shall, within 20 days after the end of the Negotiation Period, submit a statement of position to the OSC. EPA may, within 20 days thereafter, submit a statement of position. Thereafter, an EPA management official at the Supervisory level or higher will issue a written decision on the dispute to Respondent. EPA's decision shall be incorporated into and become an enforceable part of this Settlement. Respondent shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs.
- 58. Except as provided in Paragraph 54 (Contesting Future Response Costs) or as agreed by EPA, the invocation of formal dispute resolution procedures under this Section does not extend, postpone, or affect in any way any obligation of Respondent under this Settlement. Except as provided in Paragraph 68, stipulated penalties with respect to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Settlement. In the event that Respondent does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XVII (Stipulated Penalties).

#### XVI. FORCE MAJEURE

- 59. "Force Majeure" for purposes of this Settlement, is defined as any event arising from causes beyond the control of Respondent, of any entity controlled by Respondent, or of Respondent's contractors that delays or prevents the performance of any obligation under this Settlement despite Respondent's best efforts to fulfill the obligation. The requirement that Respondent exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. "Force majeure" does not include financial inability to complete the Work or increased cost of performance.
- 60. If any event occurs or has occurred that may delay the performance of any obligation under this Settlement for which Respondent intends or may intend to assert a claim of force majeure, Respondent shall notify EPA's OSC orally or, in her absence, the alternate EPA

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OSC, or, in the event both of EPA's designated representatives are unavailable, the Director of the Emergency Preparedness and Response Program, EPA Region 8, within 24 hours of when Respondent first knew that the event might cause a delay. Within 7 days thereafter, Respondent shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondent's rationale for attributing such delay to a force majeure; and a statement as to whether, in the opinion of Respondent, such event may cause or contribute to an endangerment to public health or welfare, or the environment. Respondent shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Respondent shall be deemed to know of any circumstance of which Respondent, any entity controlled by Respondent, or Respondent's contractors knew or should have known. Failure to comply with the above requirements regarding an event shall preclude Respondent from asserting any claim of force majeure regarding that event, provided, however, that if EPA, despite the late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under Paragraph 59 and whether Respondent has exercised its best efforts under Paragraph 59, EPA may, in its unreviewable discretion, excuse in writing Respondent's failure to submit timely or complete notices under this Paragraph.

- 61. If EPA agrees that the delay or anticipated delay is attributable to a force majeure, the time for performance of the obligations under this Settlement that are affected by the force majeure will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure, EPA will notify Respondent in writing of its decision. If EPA agrees that the delay is attributable to a force majeure, EPA will notify Respondent in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure.
- 62. If Respondent elects to invoke the dispute resolution procedures set forth in Section XV (Dispute Resolution), it shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Respondent shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Respondent complied with the requirements of Paragraphs 59 and 60. If Respondent carries this burden, the delay at issue shall be deemed not to be a violation by Respondent of the affected obligation of this Settlement identified to EPA.
- 63. The failure by EPA to timely complete any obligation under the Settlement is not a violation of the Settlement, provided, however, that if such failure prevents Respondent from meeting one or more deadlines under the Settlement, Respondent may seek relief under this Section.

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#### XVII. STIPULATED PENALTIES

64. Respondent shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 65.a and 66 for failure to comply with the obligations specified in Paragraphs 65.b and 66, unless excused under Section XVI (Force Majeure). "Comply" as used in the previous sentence include compliance by Respondent with all applicable requirements of this Settlement, within the deadlines established under this Settlement.

### 65. Stipulated Penalty Amounts - Payments, Financial Assurance, Major Deliverables, and Other Milestones

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Paragraph 65.b:

Penalty Per Violation Per Day	Period of Noncompliance
\$250	1st through 14th day
\$2,500	15th through 30th day
\$5,000	31st day and beyond

#### b. Obligations

- (1) Payment of any amount due under Section XIV (Payment of Response Costs).
- (2) Establishment of an escrow account to hold any disputed Future Response Costs under Paragraph 54 (Contesting Future Response Costs).
  - (3) Submission of the Work Plan in accordance with Paragraph 27.
  - (4) Submission of the Final Report in accordance with Paragraph 33.
- 66. **Stipulated Penalty Amounts Other Deliverables.** The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate deliverables pursuant to this Settlement, other than those specified in Paragraph 65.b or any other noncompliance with the provisions of this Settlement:

Penalty Per Violation Per Day	Period of Noncompliance
\$100	1st through 14th day
\$200	15th through 30th day
\$300	31st day and beyond

67. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 78 (Work Takeover), Respondent shall be liable for a stipulated penalty in the amount of \$50,000. Stipulated penalties under this Paragraph are in addition to the remedies available to EPA under Paragraphs 78 (Work Takeover).

- 68. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. Penalties shall continue to accrue during any dispute resolution period, and shall be paid within 15 days after the agreement or the receipt of EPA's decision or order. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under Paragraph 27 (Work Plan and Implementation), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondent of any deficiency; and (b) with respect to a decision by the EPA Management Official at the Supervisory level or higher, under Paragraph 57 (Formal Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA Management Official issues a final decision regarding such dispute. Nothing in this Settlement shall prevent the simultaneous accrual of separate penalties for separate violations of this Settlement.
- 69. Following EPA's determination that Respondent has failed to comply with a requirement of this Settlement, EPA may give Respondent written notification of the failure and describe the noncompliance. EPA may send Respondent a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondent of a violation.
- 70. All penalties accruing under this Section shall be due and payable to EPA within 30 days after Respondent's receipt from EPA of a demand for payment of the penalties, unless Respondent invokes the Dispute Resolution procedures under Section XV (Dispute Resolution) within the 30-day period. All payments to EPA under this Section shall indicate that the payment is for stipulated penalties and shall be made in accordance with Paragraph 51 (Payments for Future Response Costs).
- 71. If Respondent fails to pay stipulated penalties when due, Respondent shall pay Interest on the unpaid stipulated penalties as follows: (a) if Respondent has timely invoked dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to Paragraph 68 until the date of payment; and (b) if Respondent fails to timely invoke dispute resolution, Interest shall accrue from the date of demand under Paragraph 70 until the date of payment. If Respondent fails to pay stipulated penalties and Interest when due, the United States may institute proceedings to collect the penalties and Interest.
- 72. The payment of penalties and Interest, if any, shall not alter in any way Respondent's obligation to complete the performance of the Work required under this Settlement.
- 73. Nothing in this Settlement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondent's violation of this Settlement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Sections 106(b) and 122(*l*) of CERCLA, 42 U.S.C. §§ 9606(b) and 9622(*l*), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), provided however, that EPA shall not seek civil penalties pursuant to Section 106(b) or Section 122(*l*) of CERCLA or punitive damages pursuant

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to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided in this Settlement, except in the case of a willful violation of this Settlement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 78 (Work Takeover).

74. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Settlement.

#### XVIII. COVENANTS BY EPA

75. Except as provided in Section XIX (Reservations of Rights by EPA), EPA covenants not to sue or to take administrative action against Respondent pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. These covenants shall take effect upon the Effective Date. These covenants are conditioned upon the complete and satisfactory performance by Respondent of its obligations under this Settlement. These covenants extend only to Respondent and do not extend to any other person.

## XIX. RESERVATIONS OF RIGHTS BY EPA

- 76. Except as specifically provided in this Settlement, nothing in this Settlement shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Settlement shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Settlement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law.
- 77. The covenants set forth in Section XVIII (Covenants by EPA) do not pertain to any matters other than those expressly identified therein. EPA reserves, and this Settlement is without prejudice to, all rights against Respondent with respect to all other matters, including, but not limited to:
- a. liability for failure by Respondent to meet a requirement of this Settlement;
- b. liability for costs not included within the definition of Future Response Costs;
  - c. liability for performance of response action other than the Work;
  - d. criminal liability;
- e. liability for violations of federal or state law that occur during or after implementation of the Work;

- f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- g. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- h. liability for costs incurred or to be incurred by the Agency for Toxic Substances and Disease Registry related to the Site not paid as Future Response Costs under this Settlement.

## 78. Work Takeover

- a. In the event EPA determines that Respondent: (1) has ceased implementation of any portion of the Work; (2) is seriously or repeatedly deficient or late in its performance of the Work; or (3) is implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice (Work Takeover Notice) to Respondent. Any Work Takeover Notice issued by EPA (which writing may be electronic) will specify the grounds upon which such notice was issued and will provide Respondent a period of 3 days within which to remedy the circumstances giving rise to EPA's issuance of such notice.
- b. If, after expiration of the 3-day notice period specified in Paragraph 78.a, Respondent has not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portion(s) of the Work as EPA deems necessary (Work Takeover). EPA will notify Respondent in writing (which writing may be electronic) if EPA determines that implementation of a Work Takeover is warranted under this Paragraph 78.b.
- c. Respondent may invoke the procedures set forth in Paragraph 57 (Formal Dispute Resolution) to dispute EPA's implementation of a Work Takeover under Paragraph 78.b. However, notwithstanding Respondent's invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under Paragraph 78.b until the earlier of (1) the date that Respondent remedies, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, or (2) the date that a written decision terminating such Work Takeover is rendered in accordance with Paragraph 57 (Formal Dispute Resolution).
- d. Notwithstanding any other provision of this Settlement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

## XX. COVENANTS BY RESPONDENT

79. Respondent covenants not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, and this Settlement, including, but not limited to:

- a. any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund through Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;
- b. any claims under Sections 107 and 113 of CERCLA, Section 7002(a) of RCRA, 42 U.S.C. § 6972(a), or state law regarding the Work, Future Response Costs, and this Settlement:
- c. any claim arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Colorado Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, or at common law; or
- 80. Except as provided in Paragraph 83 (Waiver of Claims by Respondent), these covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to any of the reservations set forth in Section XIX (Reservations of Rights by EPA), other than in Paragraph 77.a (liability for failure to meet a requirement of the Settlement), 77.d (criminal liability), or 77.e (violations of federal/state law during or after implementation of the Work), but only to the extent that Respondent's claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.
- 81. Nothing in this Settlement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).
- 82. Respondent reserves, and this Settlement is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of Respondent's deliverables or activities.

## 83. Waiver of Claims by Respondent

- a. Respondent agrees not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have:
  - (1) **De Micromis Waiver**. For all matters relating to the Site against any person where the person's liability to Respondent with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or

part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials.

(2) MSW Waiver. For all matters relating to the Site against any person where the person's liability to Respondent with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of MSW at the Site, if the volume of MSW disposed, treated, or transported by such person to the Site did not exceed 0.2 percent of the total volume of waste at the Site.

## b. Exceptions to Waivers

- (1) The waivers under this Paragraph 83 shall not apply with respect to any defense, claim, or cause of action that Respondent may have against any person otherwise covered by such waivers if such person asserts a claim or cause of action relating to the Site against such Respondent.
- (2) The waiver under Paragraph 83.a(1) (De Micromis Waiver) shall not apply to any claim or cause of action against any person otherwise covered by such waiver if EPA determines that: (i) the materials containing hazardous substances contributed to the Site by such person contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the Site; or (ii) such person has failed to comply with any information request or administrative subpoena issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. § 9604(e) or 9622(e), or Section 3007 of RCRA, 42 U.S.C. § 6927, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site; or if (iii) such person has been convicted of a criminal violation for the conduct to which the waiver would apply and that conviction has not been vitiated on appeal or otherwise.
- (3) The waiver under Paragraph 83.a(2) (MSW Waiver) shall not apply to any claim or cause of action against any person otherwise covered by such waiver if EPA determines that: (i) the materials containing hazardous substances contributed to the Site by such person contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the Site; or (ii) such person has failed to comply with any information request or administrative subpoena issued pursuant to Section 104(e) or 122(e) of CERCLA, 42 U.S.C. § 9604(e) or 9622(e), or Section 3007 of RCRA, 42 U.S.C. § 6927, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site.

#### XXI. OTHER CLAIMS

- 84. By issuance of this Settlement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent. The United States or EPA shall not be deemed a party to any contract entered into by Respondent or its directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Settlement.
- 85. Except as expressly provided in Paragraphs 83 (Waiver of Claims by Respondent) and Section XVIII (Covenants by EPA), nothing in this Settlement constitutes a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Settlement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages, and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.
- 86. No action or decision by EPA pursuant to this Settlement shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

#### XXII. EFFECT OF SETTLEMENT/CONTRIBUTION

- 87. Except as provided in Paragraphs 83 (Waiver of Claims by Respondent), nothing in this Settlement shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Settlement. Except as provided in Section XX (Covenants by Respondent), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this Settlement diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).
- 88. The Parties agree that this Settlement constitutes an administrative settlement pursuant to which Respondent has, as of the Effective Date, resolved liability to the United States within the meaning of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, or as may be otherwise provided by law, for the "matters addressed" in this Settlement. The "matters addressed" in this Settlement are the Work and Future Response Costs.
- 89. The Parties further agree that this Settlement constitutes an administrative settlement pursuant to which Respondent has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).
- 90. Respondent shall, with respect to any suit or claim brought by it for matters related to this Settlement, notify EPA in writing no later than 60 days prior to the initiation of such suit or claim. Respondent also shall, with respect to any suit or claim brought against it for

matters related to this Settlement, notify EPA in writing within 10 days after service of the complaint or claim upon it. In addition, Respondent shall notify EPA within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial, for matters related to this Settlement.

91. In any subsequent administrative or judicial proceeding initiated by EPA, or by the United States on behalf of EPA, for injunctive relief, recovery of response costs, or other relief relating to the Site, Respondent shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenant by EPA set forth in Section XVIII (Covenants by EPA).

## XXIII. INDEMNIFICATION

- 92. The United States does not assume any liability by entering into this Settlement or by virtue of any designation of Respondent as EPA's authorized representatives under Section 104(e) of CERCLA, 42 U.S.C. § 9604(e), and 40 C.F.R. 300.400(d)(3). Respondent shall indemnify, save, and hold harmless the United States, its officials, agents, employees, contractors, subcontractors, and representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, or subcontractors, and any persons acting on Respondent's behalf or under its control, in carrying out activities pursuant to this Settlement. Further, Respondent agrees to pay the United States all costs it incurs, including but not limited to attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Respondent, its officers, directors, employees, agents, contractors, subcontractors, and any persons acting on its behalf or under its control, in carrying out activities pursuant to this Settlement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondent in carrying out activities pursuant to this Settlement. Neither Respondent nor any such contractor shall be considered an agent of the United States.
- 93. The United States shall give Respondent notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondent prior to settling such claim.
- 94. Respondent covenants not to sue and agree not to assert any claims or causes of action against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Respondent shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Respondent and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

## XXIV. INSURANCE

No later than 7 days before commencing any on-site Work, Respondent shall 95. secure, and shall maintain until the first anniversary after issuance of Notice of Completion of Work pursuant to Section XXVII (Notice of Completion of Work), commercial general liability insurance with limits of liability of \$1 million per occurrence, automobile liability insurance with limits of liability of \$1 million per accident, and umbrella liability insurance with limits of liability of \$5 million in excess of the required commercial general liability and automobile liability limits, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondent pursuant to this Settlement. In addition, for the duration of the Settlement, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Settlement, Respondent shall satisfy, or shall ensure that its contractors or subcontractors satisfy. all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Settlement. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in a lesser amount, Respondent need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Respondent shall ensure that all submittals to EPA under this Paragraph identify the Neuhauser Landfill Site, Erie, Colorado and the EPA docket number for this action.

#### XXV. MODIFICATION

- 96. The OSC may modify any plan or schedule in writing or by oral direction. Any oral modification will be memorialized in writing by EPA promptly, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Settlement may be modified in writing by mutual agreement of the parties.
- 97. If Respondent seeks permission to deviate from any approved work plan or schedule, Respondent's Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondent may not proceed with the requested deviation until receiving oral or written approval from the OSC pursuant to Paragraph 96.
- 98. No informal advice, guidance, suggestion, or comment by the OSC or other EPA representatives regarding any deliverable submitted by Respondent shall relieve Respondent of its obligation to obtain any formal approval required by this Settlement, or to comply with all requirements of this Settlement, unless it is formally modified.

#### XXVI. ADDITIONAL REMOVAL ACTION

99. If EPA determines that additional removal actions not included in the Removal Work Plan or other approved plan(s) are necessary to protect public health, welfare, or the environment, and such additional removal actions are consistent with Section VIII, EPA will notify Respondent of that determination. Unless otherwise stated by EPA, within 30 days after

receipt of notice from EPA that additional removal actions are necessary to protect public health, welfare, or the environment, Respondent shall submit for approval by EPA a work plan for the additional removal actions. The plan shall conform to the applicable requirements of Section VIII (Work to Be Performed) of this Settlement. Upon EPA's approval of the plan pursuant to Paragraph 27 (Work Plan and Implementation), Respondent shall implement the plan for additional removal actions in accordance with the provisions and schedule contained therein. This Section does not alter or diminish the OSC's authority to make oral modifications to any plan or schedule pursuant to Section XXV (Modification).

#### XXVII. NOTICE OF COMPLETION OF WORK

100. When EPA determines, after EPA's review of the Final Report, that all Work has been fully performed in accordance with this Settlement, with the exception of any continuing obligations required by this Settlement, including Post Removal Site Controls, if any, EPA will provide written notice to Respondent. If EPA determines that such Work has not been completed in accordance with this Settlement, EPA will notify Respondent, provide a list of the deficiencies, and require that Respondent modify the Removal Work Plan if appropriate in order to correct such deficiencies. Respondent shall implement the modified and approved Removal Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Respondent to implement the approved modified Removal Work Plan shall be a violation of this Settlement.

#### XXVIII. INTEGRATION/APPENDICES

101. This Settlement constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Settlement. The parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Settlement.

## XXIX. EFFECTIVE DATE

102. This Settlement shall be effective 1 day after the Settlement is signed by the Regional Administrator or his delegatee.

IT IS SO AGREED AND ORDERED:

U.S. ENVIRONMENTAL PROTECTION AGENCY:

Assistant Regional Administrator
Office of Enforcement, Compliance, and
Environmental Justice

# Signature Page for Settlement Regarding the Neuhauser Landfill Site

	FOR	Richard Dean, Manager			
	Stratus Redtail Ranch, L				
11/16/17		M.			
Dated	Ī	Richard Dean			
	1	Manager			
		Stratus Redtail Ranch, LLC			
		3480 E. Orchard Rd., Ste. 1100			
	(	Greenwood Village, CO 80111			



NOTE: Results from Lexis search on Pratt Management Company, LLC for use on Neuhauser Landfill Superfund site.

1 OF 1 RECORD(S)

## **Colorado Secretary of State**

# **Corporate Filing 1**

**Business Information** 

Filing Number: 19941145322

Name: PRATT MANAGEMENT COMPANY, LLC

Name Type: LEGAL

STANDARD BUSINESS Address: 105 S SUNSET ST STE H

LONGMONT, CO 80501-6172

ORIGINAL BUSINESS Address: 105 S SUNSET STREET SUITE H

LONGMONT, CO 80501

US

MAILING Address: PO BOX 1937

LONGMONT, CO 80502

US

**Business Type: DOMESTIC LIMITED LIABILITY COMPANY** 

Status: GOOD STANDING

Place Incorporated: COLORADO
Date Incorporated: 01/01/1995
Foreign/Domestic: DOMESTIC
Terms: PERPETUAL

Date Last Seen: 02/21/2018

**Registered Agent** 

Name: PRATT, SUSAN

Registered Agent Address 105 S SUNSET ST STE H

LONGMONT, CO 80501-6172

# **Corporate Filing 2**

**Business Information** 

**Filing Number:** 19941145322

Name: PRATT MANAGEMENT COMPANY, LLC

Name Type: LEGAL

STANDARD BUSINESS Address: 105 S SUNSET ST STE H

LONGMONT, CO 80501-6172

ORIGINAL BUSINESS Address: 105 S SUNSET STREET SUITE H

LONGMONT, CO 80501

US

MAILING Address: PO BOX 1937

LONGMONT, CO 80502

US

Business Type: DOMESTIC LIMITED LIABILITY COMPANY

Status: GOOD STANDING

Place Incorporated: COLORADO
Date Incorporated: 01/01/1995
Foreign/Domestic: DOMESTIC

# **Corporate Filing 2**

Terms: PERPETUAL Date Last Seen: 02/21/2018

**Registered Agent** 

Name: PRATT, SUSAN

Registered Agent Address 105 S SUNSET ST STE H

LONGMONT, CO 80501-6172

# **Historical Registered Agents**

Name: PRATT, SUSAN

Registered Agent Address 105 S SUNSET ST STE H

LONGMONT, CO 80501-6172

Name: PRATT, SUSAN

Registered Agent Address 105 S SUNSET ST STE H

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# Revised Report on Nature and Extent Investigation at the Stratus Redtail Ranch, LLC Erie, Colorado

**Prepared for:** 

Stratus Redtail Ranch, LLC Greenwood Village, Colorado

Prepared by:

Stewart Environmental Consulting Group, LLC
Consulting Engineers and Scientists
Fort Collins, Colorado

May 10, 2017

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#### **APPENDICES**

## Appendix A: Site History Reports

- 1. Weld County Change of Zoning Hearing April 14, 1969
- 2. Revocation of Certificate of Designation April 23, 1969
- 3. EPA Preliminary Assessment 1984
- 4. EPA Preliminary Assessment Site Report 1984
- 5. Revised Preliminary Assessment November 27, 1990
- 6. Weld County Closure Old Erie Landfill 1998
- 7. CDPHE Closure Old Erie Landfill 1998
- 8. Summary Report of Preliminary Site Investigation Tetra Tech 2007
- 9. Soil Vapor Report Old Erie Landfill Stewart Environmental 2007
- 10. Soil Vapor Investigation Old Erie Landfill Stewart Environmental 2011
- 11. Quest Pratt Property Phase I ESA Part 1 March 2, 2015
- 12. Quest Pratt Property Phase I ESA Part 2 March 2, 2015
- 13. Redtail Ranch Groundwater Report May 2016

- 14. Redtail Ranch Groundwater Report Follow up August 2016
- 15. Curt Stovall memo Neuhauser Landfill November 2016

## Appendix B: Groundwater Reports and History

- Denver Regional South Landfill Groundwater Monitoring Plan Doty & Associates September 1994
- 2. Pratt Property Mine Subsidence Investigation Western Environment and Ecology, Inc, September 19, 2014
- 3. Redtail Ranch Geotechnical Site Development Study April 26, 2016
- 4. Redtail Ranch Limited Subsurface Investigation December 8, 2016

Appendix C: Groundwater Sampling Procedures and Field Notes

Appendix D: Water and Soil Environmental Testing Reports – Surveyor Certification

Appendix E: CDPHE Approvals of Work Plan

#### 1.0 INTRODUCTION

#### 1.1 General Information

The Stratus Redtail Ranch, LLC ("**Stratus**") property is located in Weld County, Colorado. It has been determined that a portion of this property was the subject of landfilling activities dating back to mid 1960's through spring or early summer of 1969. The Certificate of Designation issued by Weld County that specifically included the Stratus property was revoked on April 23, 1969. The site history is discussed in Section 1.2 of this report.

Pursuant to a Colorado Department of Public Health and Environment ("CDPHE") approved work plan for investigation of soil and ground water dated November 10, 2016, as amended on December 29, 2016, Stratus conducted a nature and extent investigation. The property on which the investigation was conducted is shown in Figure 1-1 (the "Work Area"). Figure 1-1 also outlines the property owned by Stratus.



The purpose of this document is to provide the results of the nature and extent investigation approved by CDPHE to identify the nature and extent of solid waste and shallow/alluvial/perched groundwater (called "shallow" groundwater through the rest of this report) contamination within the work area.

Figure 1-1 - Site Location

## 1.2 Site History

As stated in the approved work plan, the site history was to be provided. There are numerous reports of this site and the full reports are found in Appendix A. They include the following:

- 1. Weld County Change of Zoning Hearing April 14, 1969
- 2. Revocation of Certificate of Designation April 23, 1969
- 3. EPA Preliminary Assessment October 24, 1984
- 4. EPA Preliminary Assessment Site Report 1984
- 5. Revised Preliminary Assessment November 27, 1990

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STEWART ENVIRONMENTAL CONSULTING GROUP, LLC

- 6. Weld County Closure Old Erie Landfill July 2, 1998
- 7. CDPHE Closure Old Erie Landfill July 2, 1998
- 8. Summary Report of Preliminary Site Investigation Tetra Tech February 2, 2007
- 9. Soil Vapor Report Old Erie Landfill Stewart Environmental September 14, 2007
- 10. Soil Vapor Investigation Old Erie Landfill Stewart Environmental January 28, 2011
- 11. Quest Pratt Property Phase I ESA Part 1 March 2, 2015
- 12. Quest Pratt Property Phase I ESA Part 2 March 2, 2015
- 13. Redtail Ranch Groundwater Report May 31, 2016
- 14. Redtail Ranch Groundwater Report Follow up August 19, 2016
- 15. Curt Stovall memo Neuhauser Landfill November 3, 2016

**Weld County Hearing** –A Weld County hearing was held regarding the Neuhauser landfill Certificate of Designation status which Certificate of Designation was for the entirety of Section 29, Township 1 North, Range 68 West of the 6<sup>th</sup> P.M., Weld County Colorado. The landfill had received complaints from the neighboring property owners. The attached transcript contains a very long discussion of the landfill operations and its lack of compliance with applicable law.

**Weld County Certificate of Designation Revocation** – Nine days after the hearing above, the landfill Certificate of Designation was revoked and operations were to cease within 30 days of April 23, 1969.

**Preliminary Assessment** – The 1984 Preliminary Assessment (PA) of the Columbine Landfill was performed on June 12. The assessment was conducted by CDPHE and Ecology and Environment Inc., a contractor for the EPA. Steve Orzinski was also present and represented Colorado Landfill Inc., which was owned by the Kiernes Corporation. At the time of the inspection, it was noted that the amount of solvent disposed at the site was "84,000 gallons, which consisted of MEK, MIBK, Cyclohexane with the remaining chemicals being unknown." A discussion of the groundwater was noted and the potential of contamination towards Coal Creek to the west of the site was identified. The inspection noted that the disposal was estimated to be on "10 to 25 acre parcel and buried for at least 10 years, sometime in the late 60's to early 70's". There were not any conclusions in this PA document.

**Preliminary Assessment Site Report** – The PA above had an associated site report. The conclusions of this site report are

"Based upon these facts it is the inspectors opinion that further follow up work is needed at this site to accurately determine the presence of the organic constituents identified at this site. Further, the follow up program should be designed to confirm the source of these compounds; the rate(s) and flow direction of any contaminate migration and provide an accurate determination of the potential for human exposure via surface and groundwater migration, the principal pathways of exposure, specifically to the alluvial aquifer associated with Coal Creek."

**Revised Preliminary Assessment** – The 1990 Revised Preliminary Assessment (RPA) was also conducted by CDPHE. This assessment was to review the work performed by the original PA and then provide conclusions for the RPA.

The RPA concluded that "[T]he Old Erie Landfill [described in the RPA as the NE ¼ of the NE ¼ of Section 29] located on the Pratt Property has documented disposal of halogenated organics and torpedo propellant in addition to other liquid and solid wastes between 1965 and 1979." The RPA describes the drainage to the south of the Old Erie Landfill as the "south draw." The RPA includes the following description of the south draw: "The south draw appears to have been the site of a variety of waste disposal activities over the years.

The time of disposal is unknown and the draw has never been a designated landfill. Wastes deposited along the south draw include regular solid wastes, photo conductor film (probably from IBM) and occasionally rusted empty drums. The draw is basically dry but bermed in four areas with surface water ponded behind the (photos 1-4). Of the four ponds, the three eastern most ponds exhibit healthy wetlands vegetation and algae growth in clear water. The fourth pond (which is also the location of a spring depicted on the topographic map) does not have wetlands vegetation or grass growing up to the waters edge. The pond water and the shore is muddy. Several unmarked rusted drums are half buried and piles of photo conductor material is found at the pond edge and within the pond (photo 4). Access to the south draw is unrestricted."

In addition, Figures 3 and 4 of the RPA indicate that trash and liquid chemicals were disposed of and burnt at locations referred to in those figures as 'Erie, Colorado, Sanitary Landfill South and East of Town' (Figure 3) and the 'Neuhauser dump in Weld County' with an address of Old Columbine Road, Weld County' (Figure 4). Figure 5 to the RPA contains a Certificate of Designation issued on July 19, 1968 for a 'Sanitary Landfill (Columbine-Newhouse)' on a location described as the entirety of 'Section29, Township 1 North, Range 68 West of the 6<sup>th</sup> P.M. Weld County, Colorado 'south of Erie, Colorado.'

The statement in the RPA that the south draw has never been a designated landfill is now known to be incorrect. Recent investigations have determined that the 'Neuhasuer Dump' was operated in portions of the south draw. The Work Area shown on Figure 1-1 includes the south draw.

The RPA further states that: "The south draw shows stressed vegetation around a pond and spring which indicates possible contamination to either the pond or the spring which feeds it.

The major pathway of concern is the ground water pathway with contamination to the alluvial aquifer, the shallow bedrock aquifer and the nearby spring."

Weld County Closure Letter – On July 2, 1998, the Weld County Department of Health issued a closure letter regarding the Old Erie Landfill stating: "Based upon review of the above pertinent documents and observation of the site, we concur that all required obligations have been satisfied and that the post-closure care and maintenance of the Old Erie Landfill have been fulfilled. As stated in your letter, the Denver Regional Landfill is required to monitoring groundwater at the Old Erie Landfill through the active life of that site."

**CDPHE Closure Letter** – On July 2, 1998, Mr. Roger Doak of the CDPHE issued a closure letter for the Old Erie Landfill. Specifically, the letter concluded; "Based on the review of the above relevant documents and observations from the site visit, we agree that all required obligations have been achieved and the post-closure care and maintenance of the Old Erie Landfill have been fulfilled. As stated in your letter, groundwater monitoring at the Erie Landfill will continue through the active life of the Denver Regional Landfill."

**Summary Report of Preliminary Site Investigation, Tetra Tech** – As part of a property investigation for SouthWestern Investment Group on the subject property(including the Work Area) Tetra Tech in February of 2007 performed an investigation. The conclusions of this investigation are:

The report provides an analysis of the analytical results as follows: "The analytical results for the soil vapor samples collected from SV-1, SV-2 and SV-3 are presented in the attached Table I (Found in Appendix A of this report, Item 8). This table also presents the Target Shallow Soil Gas Concentration, or screening levels, from the Draft SVIG based on a conservative soil gas-to-indoor air attenuation factor of 0.1 at the risk level of 1 x  $10^{-6}$  (one in one million). This attenuation is considered appropriate for soils less than five feet below a foundation surface. As stated above, each of the soil vapor samples were collected from depths of less than 20 feet below ground surface. As indicated in Table I, the

observed soil vapor concentration for 8 volatile organic compounds and hexane exceeded the screening level values, with at least one exceedance in each of the three monitoring p;oints. The observed concentrations of vinyl chloride, methylene chloride, trichoroethene (TCE) and tetrachloroethylene (PCE) in SV-3 all exceed the risk-based screening levels by a factor of more than 100 (TCE by nearly 20,000 and PCE by more than 2,000). Each of these constituents is a known or suspected carcinogen and the screening levels are based on the potential cancer risk associated with exposure to these chemicals. The maximum methane concentration observed occurred in SV-3, at 1.2% methane by volume. This is less than the lower explosive limit for methane of 5%, the threshold limited for methane gas at a landfill facility boundary. Based on these data, additional site specific information is necessary to fully characterize the nature and extent of potential contamination in this area of the site, to understand whether the site conditions represent a complete exposure pathway, and to fully characterize the potential risks." The SV-3 monitoring point is found in the upper most NE corner of the site. The remaining SV-1 and SV-2 are near the Old Erie Landfill boundary along the north property boundary of the work area.

In addition, these comments were included in the report: "As documented through our review of landfill records available through the CDPHE, groundwater conditions in the area are somewhat complex. The existing groundwater monitoring network downgradient of the DRLS consists of four monitoring wells completed in the No. 6 coal seam which exists beneath the property, dipping to the southeast at a reported angle of 1.5 degrees. Groundwater may also occur in shallower isolated or perched zones of more permeable sand and sandstone lenses within the claystone bedrock of the Denver-Arapahoe formation. In reports for both the DRLS and the Front Range Landfill (FRL) to the east, it has been concluded that groundwater encountered in these shallow, perched systems are typically isolated and not likely to be continuous, or contiguous, across the site.

Groundwater monitoring results from the DRLS have not identified any "statistically significant" increases (see December 8, 2006 *Letter Report for Due Diligence* Assessment) of contaminants in the downgradient wells within the No. 6 coal 'aquifer'. Along the west side of the DRLS and throughout the FRL site, perched groundwater zones have been identified in the claystone formation above the No. 6 coal. As discussed previously, and in accordance with the EPA's Draft SVIG, vapor intrusion is typically a concern where the depth to groundwater is less than 100 feet. Therefore, the focus of the enhanced groundwater investigation will be to identify the occurrence of groundwater within the No. 6 coal 'aquifer', or shallower, perched aquifers to a maximum depth of 100 feet below ground surface.

Depending on subsurface conditions encountered during drilling, monitoring well pairs (nested wells) may be installed at one location if multiple perched aquifers, or saturated zones, are encountered. It is anticipated that the No. 6 coal 'aquifer' may be encountered at depths of less than 100 feet in the western portion of the site, but in the eastern portion of the property this aquifer may be as deep or deeper than 175 feet, as the surface topography rises to the east and the aquifer appears to dip, or get deeper, to the east or southeast."

**Supplemental Soil Vapor Investigation, Stewart Environmental Consultants** – This letter report was provided to Southwestern Investment Group on September 14, 2007 and contained the following conclusions and recommendations:

"The following conclusions and recommendations are based the findings of the current investigation, data from the June 2007 site sampling, data obtained from a February 2, 2007 Tetra Tech report, and file material from CDPHE.

#### Conclusions:

- Landfill gases from Denver Regional Landfill and the Old Erie Landfill are migrating onto the property located south of the landfills. The affected areas are located on the north side of the subject property. Little to no soil gas appears to emanate from Front Range Landfill to the subject property.
- Soil vapor monitoring wells around the Denver Regional Landfill, particularly on the south side, are completed at depths too deep to accurately measure migration of the gases affecting the subject property.
- Perched groundwater in the northeast corner of the subject property has been affected. The concentration of 1,1-dichloroethane and other VOCs detected in the sample from SV-10 do not represent an immediate threat to human health. However, off-gassing from groundwater may be an issue in the future if it is shown that perched water conditions are prevalent and persistent. If perched water is only present for short periods after storm events it may not represent a significant threat. Additional study is required.

#### Recommendations:

- Remediation of soil vapors will benefit groundwater quality in the northeast corner. Specific technologies to address groundwater may or may not be necessary in the future. The situation will require additional study to assess groundwater occurrence and quality.
- Remediation of soil vapors impacting the property may include an upgrade of the existing and/or proposed gas collection system at the landfill. Other remedial actions also may be necessary. This could include installation of a vapor collection trench or a series of vapor extraction wells along the boundary between the subject property and the landfill or at various locations on the subject property.
- Regularly scheduled monitoring should continue in order to establish trends in subsurface conditions and ensure that harmful or explosive vapors are not reaching residences as the property is developed.
- Determine if corrective actions to address the documented migration of soil vapors have been completed by Denver Regional Landfill.
- Review options for engineered remedial systems. Enter discussions with Denver Regional Landfill concerning who is to be responsible for development and installation of the systems.
- Continue to monitor each of the soil vapor points for methane/LEL on a quarterly basis
- Monitoring the deeper screen intervals at SV-9 and SV-10 to establish trends in perched water conditions. Consider installation of groundwater monitoring wells in this area.
- Sample selected vapor monitoring points for VOCs to establish trends in soil vapor conditions.
- Review options for engineered venting system beneath structures constructed in the areas of concern. Options may vary depending upon type of construction and land use.
- Review options for receipt of regulatory closure from CDPHE."

**Soil Vapor Monitoring Report, Stewart Environmental** dated January 28, 2011, Stewart Environmental provided a letter report to Ms. Susan Pratt which provided additional information on the soil vapor monitoring at the Old Erie Landfill site. The conclusions are as follows:

"The recent site work included screening for landfill gases to investigate current site conditions. This work was intended as a screening process and did not include sampling for laboratory analyses of VOCs. As depicted on Figure 2 and summarized in Table 1, the impact of methane and other landfill gases has subsided. No elevated methane/LEL readings were recorded in any of the monitoring points. Waste Connections reports that their methane recovery system at the Denver Regional Landfill has been improved. It is believed that this, along with aging of the landfills, is having a positive effect on the migration of landfill gases to the Pratt property.

**Quest Phase 1 – March 2, 2015** – On March 2, 2015, Quest Environmental provided a Phase 1 report to Stratus Companies, LLC. As part of this Phase 1, Quest did not find any significant data gaps, as required under ASTM standards. The conclusions of this Phase 1 investigation are:

"Quality Environmental Services & Technologies, Inc. (QUEST) has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 for the approximately 290 acre, undeveloped, agricultural property (known as "the Pratt Property") located in Weld County (portion of Section 29, Township 1 North, Range 68 West), approximately two miles southeast of the town of Erie, Colorado, northwest of the intersection of County Roads 4 and 5. Any exceptions to, or deletions from, this practice are described in this report. At the time of our January 30, 2015 visit, the subject site visibly appeared to be in good environmental condition. Ongoing, localized oil and gas production is evident on the east side of the subject site. While on site, QUEST observed that approximately half of the natural gas wellheads on the subject property contained minor (less than several square feet of stained surface soils) leaks. Localized oil/gas stains, likely the result of ongoing leaks in the valving (sic) were evident on the underlying surface soils. Oil and gas production equipment was also observed in localized areas on adjacent sites, specifically the Old Erie Landfill and Waste Connections, Inc. Denver Regional Landfill (South) sites, both immediately north (and topographically up- and cross-gradient) of the subject site. Additionally, ongoing underground oil pipeline trenching activities were occurring in the eastern and southeastern portions of the subject site."

Although records generally do not indicate a history of significant on-site environmental concerns, the subject site currently supports oil and gas production activities and is immediately surrounded by active and inactive landfills. According to COGIS, on February 24, 2011, the Pratt 29-3 well, operated by Synergy Resources Corporation, released an unknown volume of oil and water due to a faulty fitting connection of the water dump line into the concrete vault. Reportedly the release/spill did not impact groundwater and surface water and was contained within the berm. Final resolution on this spill/release was reached on July 19, 2011 and the case was closed. January 2007 landfill gases monitoring conducted by Tetra Tech detected elevated LEL conditions and identified exceedances for eight (8) VOCs and hexane from three (3) monitoring wells in the northeast corner of the Pratt property, near the northern subject property's boundary. Concentrations of vinyl chloride, methylene chloride, trichloroethene (TCE), and tetrachloroethylene were observed that "exceed the risk based screening levels by a factor of more than 100 (TCE by nearly 20,000 and PCE by more than 2,000)."

Groundwater sampling was conducted from two (2) monitoring wells located south-centrally on the subject site. "None of the petroleum hydrocarbon or VOCs analyzed for in the groundwater samples were detected above laboratory reporting limits...and none exceed the Federal Drinking Water Standards, or screening levels." In November of 2010, Stewart Environmental conducted follow-up soil

vapor monitoring for landfill gases at the subject site, following installation of Waste Connections' methane recovery system at the Old Erie Landfill site in 2009, and found that "the impact of methane and other landfill gases has subsided." As noted by Stewart Environmental, "continued 'clean' conditions at the site are dependent upon Waste Connections' successful operation of the methane recovery and leachate recovery systems at the Denver Regional Landfill, as well as maintenance of the cap at the old Erie Landfill per the Closure Plan." With regard to the 2007 soil vapor VOC exceedances identified at the subject site, QUEST was not able to obtain any further information/documentation regarding remediation and/or follow-up monitoring at the subject site. QUEST therefore concludes that on-site environmental concerns appear to be moderate. QUEST has determined that the identification of localized leakage of hydrocarbons and VOC soil vapor exceedances on the subject site represent recognized environmental conditions (RECs).

Current and/or historic activities at adjacent and surrounding properties do not represent historical recognized environmental conditions (HRECs); however they do represent recognized environmental conditions (RECs) and controlled recognized environmental conditions (CRECs) that have the potential to impact the subject site. Specifically, the immediately adjacent Front Range landfill does represent a recognized environmental condition (REC), and the Denver Regional and Old Erie (Columbine) Landfills do represent controlled recognized environmental conditions (CRECs) to the subject site.

The Front Range Landfill property, which is still operated by the Front Range Landfill, is located less than 1/8-mile east (upgradient) and adjacent (across Weld County Road 5) to the subject site. The property, which is currently an operational solid waste facility/landfill (SWF/LF), is on the RCRA-NonGen/NLR list. Historically, the site was also listed as Small Quantity Generator in 2009 and as a Conditionally Exempt Small Quantity Generator in 1997 and 2001, with no violations found. The site is on the Financial Assurance list for closure costs. Front Range Landfill opened in 1996 and significantly increased operations in 2011, when Denver Regional Landfill was closed to regular dumping. Front Range Landfill is estimated to have a 30 to 50 year dumping capacity. The site is a municipal solid waste landfill operating under a permit issued by CDPHE and Weld County. The landfill undergoes quarterly groundwater monitoring (for leachate and explosive gas) and slope and drainages monitoring. Since the property is a designated (active) landfill located up-gradient and immediately adjacent to the subject site, QUEST considers the site to be a recognized environmental condition.

The Columbine (Old Erie) Landfill property, currently an inactive landfill, is located less than 1/8-mile north (up-gradient) and immediately adjacent to (bordering) the subject site. The property is designated as a solid waste facility/landfill (SWF/LF), and is on the CERC-NFRAP list. According to the June 16, 1992 URS Site Inspection Prioritization Report, "the complete nature, quantity, and composition of hazardous wastes deposited...at the Erie Landfill is unknown." According to a July 24, 1992 letter from USEPA to the Concerned Citizens of Erie, USEPA did not recommend NPL listing and a No Further Action (NFA) flag was placed on the site in the Superfund (CERCLIS) database on June 19, 1992, thus placing the site on the CERC-NFRAP list. A Preliminary Assessment conducted at the site in 1984 detected groundwater concentrations of volatile organic compounds, 1-butene and oxybismethane, although concentrations reportedly did not exceed State water standards. The site remained open until 1983; it was closed in 1984, vented, re-vegetated, and completely filled by 1985, with the final volume of waste estimated at 400,000 cubic yards. The *Preliminary Assessment* report author, Austin Buckingham, summarizes the operational history of the Old Erie Landfill thusly: "The Erie Landfill was operated in a manner that maximized its contaminant release to the environment." In 1998, Allied Waste Industries requested and received acknowledgment from the Weld County Department of Health and CDPHE that their post-closure care obligations for the Old Erie Landfill had been fulfilled. Both regulatory bodies prescribed groundwater monitoring at the Old Erie Landfill through the life of the active Denver Regional Landfill. Most recently, in December 2014, Encana Oil and Gas USA, Inc.

(Encana) and Ms. Pratt as the Registered Agent for WWD Limited Liability Company were advised by CDPHE that their pipeline trenching activities were in violation of solid waste laws by disturbing solid waste at the Old Erie Landfill without an approved material management plan and remediation plan. In response, Encana developed and provided to CDPHE a *Waste plan for ground disturbance activities around landfills* and *DJ Waste Management Plan*. Reportedly, the Old Erie Landfill site is to undergo routine groundwater monitoring through the active life of the immediately adjacent Denver Regional Landfill. Since the property is a designated (inactive) landfill, contains ongoing oil and gas production activities, and is located up-gradient and immediately adjacent to the subject site, QUEST considers the site to be a controlled recognized environmental condition.

The Denver Regional Landfill (South) / Waste Connections, Inc. - Denver Regional Landfill / Laidlaw North property, which is currently occupied by the Denver Regional Landfill, is located ¼ QUEST Environmental Project No. 1502169-01 Phase I Environmental Site Assessment to ½ -mile north/northwest (up- and cross gradient) and adjacent to the subject site. The Denver Regional Landfill consists of two landfills, previously designated as Laidlaw North and South. The 160-acre South portion is immediately adjacent to (bordering) the subject site, while the 80-acre North portion is directly across Weld County Road 6. The property, which is currently a partially operational solid waste facility/landfill (SWF/LF), is on the LAST, CO ERNS, and Financial Assurance (for closure costs) lists. A records search at www.coworkforce.com Oil & Public Safety Division, COSTIS identified that four (4) leaking ASTs were permanently closed on April 7, 2014. According to the EDR report, on July 1, 1994, a transfer track attempted to leave 7-8 medical (biohazard) waste bags at the landfill. Reportedly, CDPHE and EMU were notified, but the situation was likely rectified, as no documentation regarding release of hazardous substances from this event was identified. The property is also on the Financial Assurance list for closure costs. The landfill undergoes routine groundwater monitoring (for leachate and explosive gas) and slope and drainages monitoring. Reportedly, environmental monitoring is to occur for approximately the next thirty years. Since the property is a designated (inactive) landfill, contains ongoing oil and gas production activities, and is located up- and cross-gradient and immediately adjacent to the subject site, QUEST considers the site to be a controlled recognized environmental condition.

This assessment has revealed the above detailed evidence of significant RECs (including HRECs and CRECs) in connection with the subject property that could result in potential exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, and/or surface water on the property. As such, QUEST recommends that the monitoring be continued and the engineering controls should be maintained including the Waste Connections' continued operation of the methane recovery and leachate recovery systems, as well as maintenance of the cap at the old Erie Landfill per the Closure Plan. Additionally, if vapor migration is suspected, the Client may wish to conduct a vapor encroachment screen (VES) at the subject site in accordance with ASTM VES Standard E2600-10."

In addition, the Phase I report's findings relative to a site reconnaissance unequivocally states that "[T]here were no indications of significant trash or other solid waste disposal on site . . ."

**Quest February – May 2016 Groundwater Assessment** – On May 31, 2016, Quest Environmental provided a groundwater assessment of the Property. The conclusions of this report are:

"QUEST visual findings, in conjunction with the laboratory results, indicate that contaminated soils are present on site, in and around the vicinity of monitoring well GW#9. The observed drum remnants near (up-gradient of) monitoring well GW#13 do not appear to be contributing to the identified on-site contamination, as groundwater collected from GW#13 contained no detectable concentrations of volatile organics. On-site volatile organics contamination appears to be localized to the northeast

portion of the site (within the proposed buffer zone area and inside the northern residential lot limits at the east end of the site), in the area down-gradient of GW#13 (to the north) and up-gradient of GW#11, GW#14, and GW#17 (to the south). Wells GW#14 and GW#17 contained clean groundwater and are located within a different drainage area that is immediately south of the volatile-organics contaminated drainage area containing GW#3, GW#8, GW#9, GW#16, and TB-1.

Numerous attempts have been made to obtain groundwater from wells GW#6, GW#10, and GW#15, to conclusively delineate the southwest limit of the area of contamination. However, it appears that no shallow groundwater system(s) exist in this area, thereby limiting the potential for volatile organics contamination migration in these locations. Additionally, PID field screening identified consistently low to none detected concentrations of airborne TVOCs in monitoring wells GW#6, GW#10, and GW#15. Based on this information, QUEST concludes that the current extent of contamination is limited to the areas northeast of GW#6, GW#10, GW#15, GW#14, and GW#17, and southwest of GW#13.

Although the concentrations of volatile organics (cis-1,2-DCE, TCE, and 1,4-dichlorobenzene) detected in well GW#9 soils did not exceed regulatory limits; TCE and cis-1,2-DCE groundwater concentrations from wells producing groundwater within the northeast portion of the property (GW#3, GW#8, GW#9, GW#16, and TB-1) exceeded CDPHE Groundwater Protection Water Standards, with highest concentrations detected in well GW#16. Of note, Tetra Tech, as detailed in their February 2, 2007 Summary Report of Preliminary Site Investigation Activities report, observed soil vapor TCE concentrations in monitoring point SV-3 (also referred to as SV-3 TT in the Stewart Environmental reports) that exceeded the risk-based screening level by a factor of nearly 20,000. Tetra Tech also observed a 1,1-DCE soil vapor concentration in SV-3 which exceeded the risk based screening level by a factor of 11. SV-3 is located at the northeastern-most point of the subject property, just south of the Old Erie Landfill. Soil vapor samples were evaluated against risk-based screening levels developed in accordance with the Target Shallow Soil Gas Concentration values, as determined utilizing USEPA's 2002 Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. As detailed in their September 14, 2007 Supplemental Soil Vapor Investigation - Property South of the Old Erie Landfill, Erie, Colorado report, Stewart collected a perched water sample from monitoring point SV-10 that was found to contain an exceedance for 1,1-DCA. Tetra Tech's and Stewart's findings indicate that TCE, 1,1-DCE, and 1,1-DCA contamination on the subject site may be due to landfill leachate from the Old Erie Landfill, given the proximity of SV-3 and SV-10, to this landfill.

No volatile organic compounds were detected in the groundwater samples from wells GW#12, GW#5, GW#11, GW#14, and GW17 indicating that no groundwater contamination was detected downgradient (southwest) of these locations. The existing buffer zone near GW#12, GW#5, GW#11 appears to be sufficient for planned residential development. However, due to the presence of volatile organics contamination in the northeast portion of the subject site, you may wish to move the northeastern limit of the proposed development's residential lots south from its current proposed location to immediately south of the drainage area that contains GW#14 and GW#17."

**Follow up Groundwater Report, Quest Environmental** – On August 19, 2016, Quest provided an updated sampling and laboratory results for groundwater sampling in August 2016. There were not any conclusions regarding this report but the data is presented in both the report in Appendix A and in the water quality table 5-1 in this report.

**Curt Stovall Memo on Neuhauser Landfill** – Mr. Curt Stovall provided a site history to the file based on the reports within the file. The memo states the following regarding the work area:

"The Redtail Ranch developer, Stratus Redal Ranch, LLC, purchased approximately 290 acres of Pratt property boated south of Old Erie and Denver Regional Landfills in July 2015. In early 2016, Stratus retained Quest Environmental to perform a groundwater investigation within a drainage basin located immediately south of the existing landfills to assess the source of the soil vapor contamination. Quest installed 17 temporary monitoring wells in the northern portion of the Redtail Ranch property in three phases between February 2016 and May 2016. Quest presented its groundwater assessment results in a report dated May 31, 2016. The Quest groundwater assessment identified significant concentrations of VOC contamination in groundwater at several welllocations (e.g., TCE in groundwater at a concentration of 4,500  $\mu$ g/L at GW#16).

As a result of the Quest groundwater assessment, CDPHE conducted of a comprehensive review of available historical documents related to the Old Erie Landfill and the Redtail Ranch property (also referred to herein as the former Pratt property). Based on its file review, CDPHE determined that the landfilling operations performed by John Neuhauser were conducted in two separate areas located on the Redtail Ranch property, one immediately south of Old Erie Landfill, and the other immediately south of Denver Regional Landfill. Historically, it was thought that the Neuhauser landfilling operations occurred within the boundaries of the Old Erie Landfill. During a meeting on June 15, 2016, CDPHE informed representatives of Stratus and Pratt of its findings. CDPHE now refers to the two disposal areas on the Retail Ranch property as the Neuhauser Landfill."

The memo also discussed aerial photos of the site. The memo states: "An aerial photograph dated June 16, 1970 seems to confirm that landfilling at the Old Erie Landfill did not commence until sometime after June 1970. Weld County Certificate of Designation No. 25 dated March 3, 1971 was issued to Weld County Landfill, Inc., following adoption of a resolution dated February 24, 1971 approving a 23.3-acre parcel of land within the current footprint of the Old Erie Landfill.

The foregoing reports and summaries are all subject to the full contents of the reports in Exhibit A and the additional information developed and presented below.

## 1.3 Objectives of CDPHE Approved Investigative Work Plan

The primary objectives of this investigation were:

- 1. To define the "shallow/alluvial/perched" groundwater (called "shallow" groundwater throughout the rest of this report) elevations and the extent of shallow groundwater contamination in the Work Area;
- 2. To further define the shallow groundwater flow direction within the Work Area;
- 3. To further define the location of any organic compounds in the soil and shallow groundwater within the Work Area; and,
- 4. To evaluate whether subsurface soil contamination exists within the Work Area and the location of past solid waste landfilling within the Work Area.

The investigation work plan and the amendments there to were approved by CDPHE with modifications and conditions (See Appendix E). Set forth below are the results of the investigation.

## 1.4 Work Area Summary

## 1.4.1 Work Area and Surrounding Properties

The Work Area is owned by Stratus and consists of open land and one oil well drill staging pad. To the south of the Work Area is open land which is also owned by Stratus. The property owned by Stratus is outlined in Figure 1-1. The property to the south and ultimately the southern portion of the Work Area is intended to be developed as residential property. Except as noted in the preceding sentence the Work Area is intended for open space and recreational trails. To the north, west and east of the Work Area are solid waste landfills.

## 1.4.2 Subsurface Geologic Conditions and Previous Groundwater Studies

There are several reports which summarize the subsurface geologic conditions at the site. The reports related to the geologic conditions within the Work Area which are in the possession of Stratus are provided in Appendix B. These reports are listed below:

- 1. Denver Regional South Landfill Groundwater Monitoring Plan Doty & Associates September 16, 1994
- 2. Pratt Property Mine Subsidence Investigation Western Environment and Ecology, Inc, September 19, 2014
- 3. Redtail Ranch Geotechnical Site Development Study AG Wassenaar April 26, 2016
- 4. Redtail Ranch Limited Subsurface Investigation Earth Engineering December 8, 2016

**Doty Report** - The Doty report discusses the subsurface conditions as soils, bedrock and geologic structure. The soils are described as "generally silty clays with a trace to some sand and are of low plasticity". The general thickness of the soils were 4 to 16 feet in depth.

The bedrock is described as being on top of "the Laramie Formation which consists of claystone, siltstone, sandstone, occasional coal seams and relatively thin layers of highly cemented ferruginous siltstone known locally as ironstone". This bedrock generally is in a thickness of 100 to 150 feet. The coals are beneath these layers and are 2 to 4 feet in thickness.

The geologic structure is "located on the northwestern flank of the Denver Basin, a north-south trending asymmetrical downwarp involving as much as 13,000 feet of sedimentary rocks". The geologic structure indicates a "mild 3 degree dip to the southeast, near the main shaft" of the Columbine mine.

The Doty report discusses three different groundwater zones. These are described as:

- 1. Soil water depths of 11 to 39 feet from the surface
- 2. Fractured zone water depths of 30 to 38 feet below the surface
- 3. Deep Bedrock water depths of 100 to 165 feet below the surface

The Doty report notes significant differences in the Total Dissolved Solids (TDS) of these different zones. The soil zone contained TDS of 1,695 mg/l, the fractured zone of 7,542 mg/l and the deep bedrock zone of 7,677 mg/l. The nitrate values for the same zones are reported as 33 mg/l, less than 5 mg/l and less than 1 mg/l. In the deep zone, the ammonia values are higher as a result of the coal water interaction.

**Western Environment and Ecology** - The Western report was issued in connection with closure of the abandoned mine. However, the report provides information regarding the subsurface conditions at the site. The report contains the following conclusions and recommendations:

"Based upon the results of the preliminary investigation completed on the property consisting of approximately 330 acres in Section 29, Township 1 North, Range 68 West, Erie, Colorado, Western Environment and Ecology, Inc. (Western Environment) presents the following:

- The average "theoretical void" encountered beneath the property was 0.8 feet.
- The top of the "main" seam ranged from 267 to 309 feet below the surface. However, using the results of subsidence investigations on adjacent projects, a conservative average depth to the top of the main seam of 272 feet was used.

Using these conclusions, the following general subsidence related recommendations for development are presented.

- Areas shown on Figure 2 as not being undermined have no mine subsidence related development restrictions.
- The theoretical "worst case" strains identified for the project will allow construction of buildings or building segments of 115 feet in maximum length.
- Structures should be limited to two stories and be constructed using wood or metal framing.
- Utility installations should take into account the potential for 0.17% strains above mine workings.
- Larger structures may be built if additional studies are conducted."

Based on this report, it appears that the site has the Pierre Shale beneath it. It is also on the western edge of the Fox Hills sandstone. Under the site is the Laramie Formation, which is "predominately a fresh water deltaic sequence, consisting of clays, sands, silts and coals." The upper unit is approximately "600 feet thick and made up of mostly clay shales, very fine sandy shales and lenticular beds of sandstone". The Laramie formation lies on top of the Fox Hills Sandstone.

The site geology was described by Western as:

"Two distinct units were encountered during drilling on the Pratt Property. The first unit penetrated was sandy clay occurring from 0 to 15 feet in depth. This unit appears to be aeolian (wind deposited) in occurrence. Western Environment's experience with the geotechnical properties of the unit has shown that, although high swell potentials are unlikely, collapsing upon saturation can occur with aeolian soils.

The next unit that had a transitional boundary between soil, weathered rock, and fresh rock was the interbedded clays, silts, fine-grained sand, and coals of the Cretaceous Age Laramie Formation. This formation extended from approximately 10 to 15 feet beneath the surface to greater than 380 feet.

At least six coals have been identified during drilling on the subject property. However, no attempt to correlate the coals was made. The "main" seam of the Columbine Mine occurred at a depth ranging from approximately 267 to 307 feet in the borings advanced on the property. The Fox Hills Formation was not encountered during drilling."

Western also concluded that the Pratt Property (the Work Area) had the following characteristics:

**"S-29-2** - Sandy clay soil occurred from O to 10 feet. Brown to iron stained clays tone was drilled from 10 to 35 feet. From 35 feet to 295 feet, light gray to dark gray claystone was penetrated. Circulation was lost at 295 feet. The Columbine "main" seam occurred from 307 to 315 feet. Maximum caliper deflection of 7 .8 inches at 309.8 feet was observed. Total depth of the hole was 320 feet. Collapse was complete, with no open voids.

**S29-5** - Sandy clay soil occurred from O to 15 feet. Light brown to gray to dark gray claystone with interbedded coal was drilled from 15 to 360 feet. Circulation was not lost. The Columbine "main" seam was penetrated from 267 to 275 feet. Negative caliper deflection was observed at this location. Collapse was complete with no open voids."

**A.G. Wassenaar Geotechnical Report** – The April 28, 2016 geotechnical report also discusses soils, bedrock and groundwater at the site. The following is a quote from the report:

"In general, the subsurface materials encountered consist of fill and clay overlying sedimentary bedrock. Claystone and/or sandstone bedrock was encountered at depths of ½ to 16 feet in all of the test borings. Lignite (coal) lenses were encountered within the bedrock at various depths. Ground water was measured at depths of 1 to 43 feet in 16 of the 38 test borings during this study."

In the identified work area, the borings of interest would be: TB-1 through TB-10. The drill logs for this investigation and location map are found in Appendix B in their entirety but are provided in the following Figures 1-2 through 1-4.

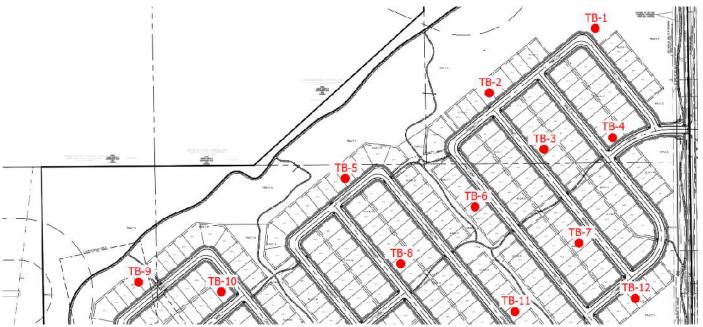


Figure 1-2 - Wassenaar Test Boring Locations

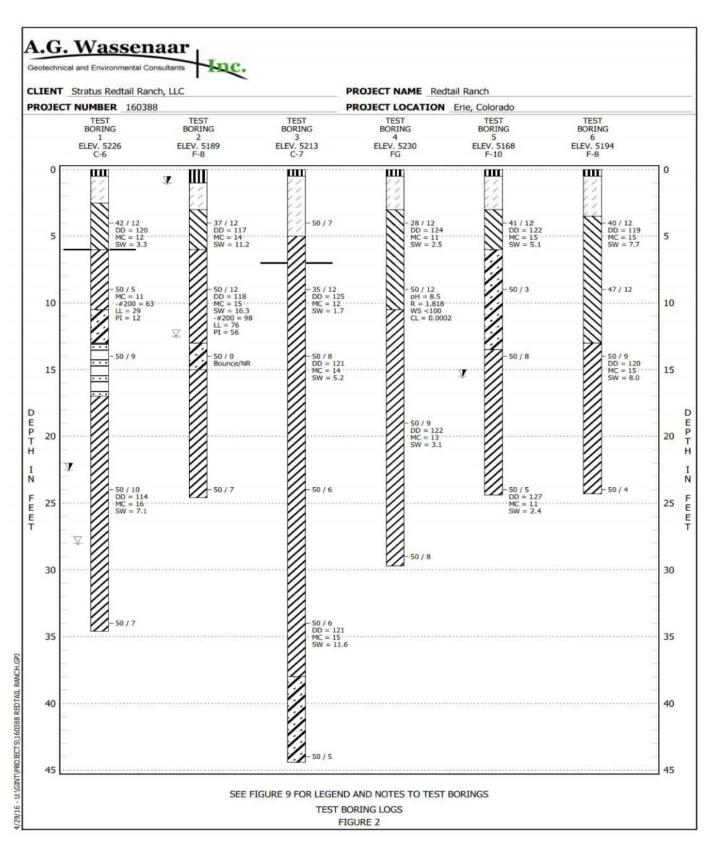


Figure 1-3 – Wassenaar Test Boring Logs 1-6

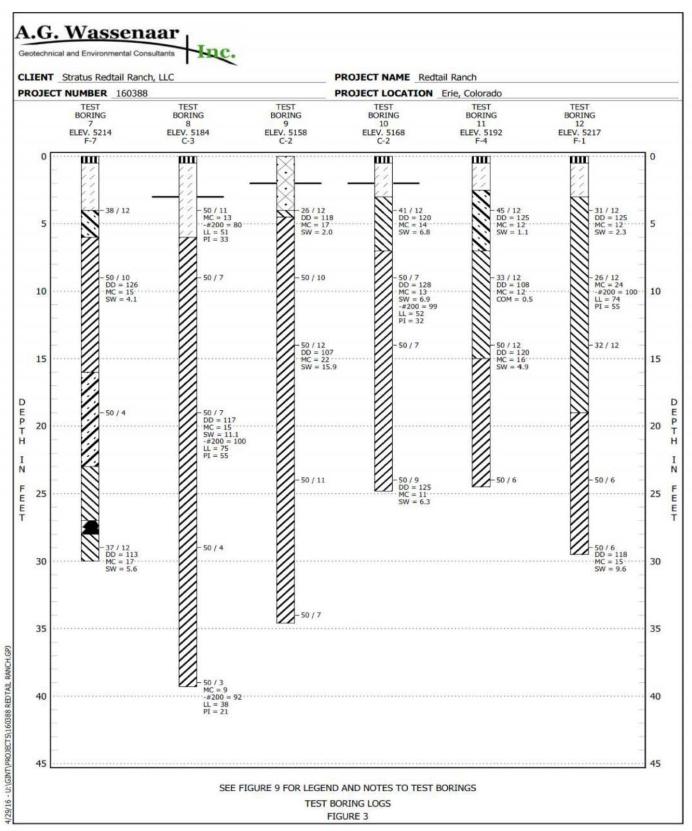


Figure 1-4 – Wassenaar Test Boring Logs 7-12

As noted in the above boring logs, only TB-1, TB-2 and TB-5 showed any indication of groundwater. TB-2 is found near QMW-9 and QMW-3. TB-5 is found near QMW-11, which has been dry. This would indicate that there are potentially paleo channels where this shallow groundwater is found. This will be investigated further in additional studies

**Earth Engineering Geotechnical Report** dated December 8, 2016. The following discussion is a description of the Earth Engineering characteristics of the site:

"Based on results of the field borings and limited laboratory testing, subsurface conditions can be generalized as follows. Sparse vegetation was observed at the surface of each boring with surficial trash also observed at borings MW-4A and MW-4B. The sparse vegetation at borings MW-1 through MW-3B, MW-5 and MW-6 was underlain by cohesive subsoils visually classified as sandy lean clay. The cohesive soils extended to approximate depths of 3 to 7 feet below present site grades. The sparse vegetation and surficial trash at borings MW-4A and MW-4B was underlain by a mix of sandy lean clay and trash which extended to approximate depths of 3 and 2 feet below present site grades, respectively, and was underlain by visually classified sandy lean clay to approximate depths of 6 and 5 feet, respectively. Underlying the cohesive soils in borings MW-1, MW-2, MW-5, and MW-6 was a mix of sandy lean clay and trash which extended to approximate depths of 7 to 15 feet below existing site grades. Trash was not encountered in borings MW-3A and MW-3B. In general, the trash was identified as magnetic tape, plastic, polyvinyl chloride (pvc) pipe and glass. The underlying trash and/or cohesive materials in the borings extended to the underlying bedrock formation. The interbedded claystone/siltstone/sandstone bedrock was encountered within each boring at depths ranging from approximately 5 to 15 feet below present site grades and extended to the depths explored, approximately 15 to 26 feet below present site grades. Occasional zones of cemented sandstone/siltstone bedrock were encountered. The interbedded claystone/siltstone/sandstone bedrock was generally weathered/soft to moderately hard at the trash and/or soil bedrock interface becoming more competent/moderately hard with depth.

The stratification boundaries indicated on the boring logs represent the approximate locations of changes in trash, soil and bedrock types; in-situ, the transition of materials may be gradual and indistinct.

Observations were made while drilling the borings on November 28, 29, and 30, 2016 as noted on each of the enclosed Log of Borings, to detect the presence and depth of measureable water levels. As indicated on the enclosed boring/monitoring well logs, water was encountered in borings MW-2 and MW-6 at approximate depths of 5 and 7 feet below existing site grades, respectively, while water was not encountered to maximum depths of exploration in the remaining borings. The water level measurements are indicated in the upper right hand corner of the boring/monitoring well logs. Fluctuations in water levels can occur over time depending on variations in hydrologic conditions and other conditions not apparent at the time of this report. Water level measurements indicated on the boring logs represent the depth of water at the specific time and location of the measurements completed.

Zones of perched and/or trapped water may occur at times in the subsurface trash and/or soils overlying bedrock, on top of the bedrock surface or within permeable fractures in the bedrock materials. The location and amount of perched water is dependent upon several factors, including hydrologic conditions, type of site development, irrigation demands on or adjacent to the site, and seasonal and weather conditions. These observations represent water conditions at the time of the field exploration, and may not be indicative of other times, or at other locations."

#### 1.4.2 Current Shallow Groundwater Conditions and Elevations

This report addresses only the shallow groundwater regime within the Work Area. There are also several deeper groundwater regimes that have been identified by the DRSL reports (see Doty Groundwater Monitoring Plan, September 16, 1994). For the purposes of this investigation, shallow groundwater is defined as groundwater located no deeper than 15 to 30 feet below ground surface. Based on the shallow groundwater investigations performed in December 2016 and January 2017, it appears that there exists the potential for two separate shallow groundwater regimes in the Work Area.

As noted in the recommendations section of this report additional shallow groundwater investigations will be conducted in the next phase of investigations. Shallow groundwater generally flows to the west and is found in the alluvial soils and on top of the shallow and weathered zones of the bedrock. This shallow groundwater has the potential to interact with the trash from the historic landfill operations identified within the Work Area. In the monitoring wells installed in November 2016, trash was identified in 5 of the wells (SEC MW-1, SEC MW-2, SEC MW-4, SEC MW-5 and SEC MW-6; See Figures 1-5 to 1-9). The trash was typically magnetic tape and plastic. This trash, while present at the site, is not the likely source of the contamination at the site. As noted above, The Earth Engineering Report is included in Appendix B.

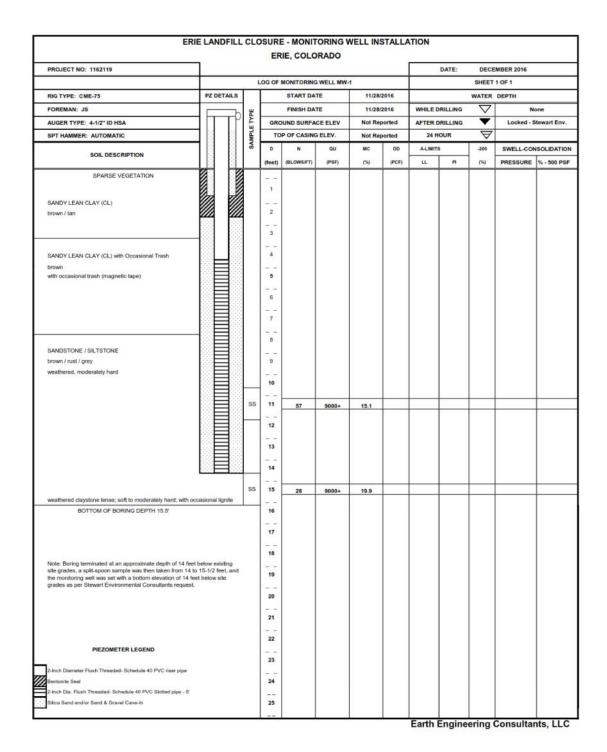


Figure 1-5 – Earth Engineering Test Boring SEC MW-1

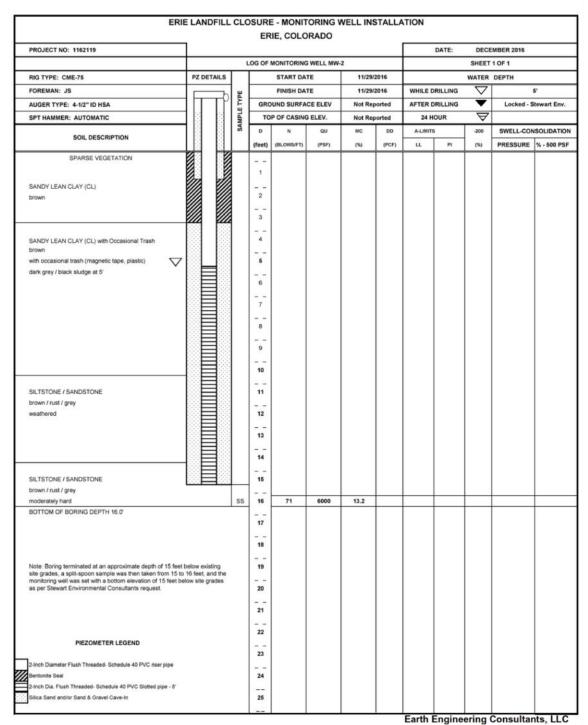


Figure 1-6 – Earth Engineering Test Boring SEC MW-2

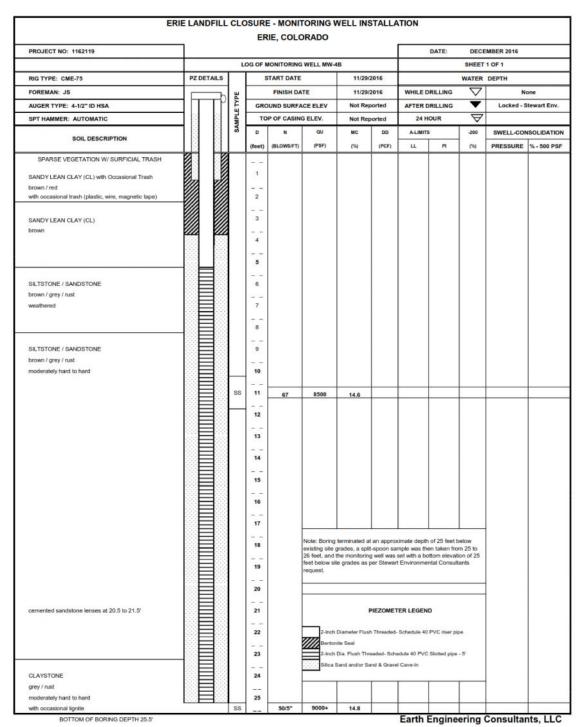


Figure 1-7 Earth Engineering Test Boring SEC MW-4

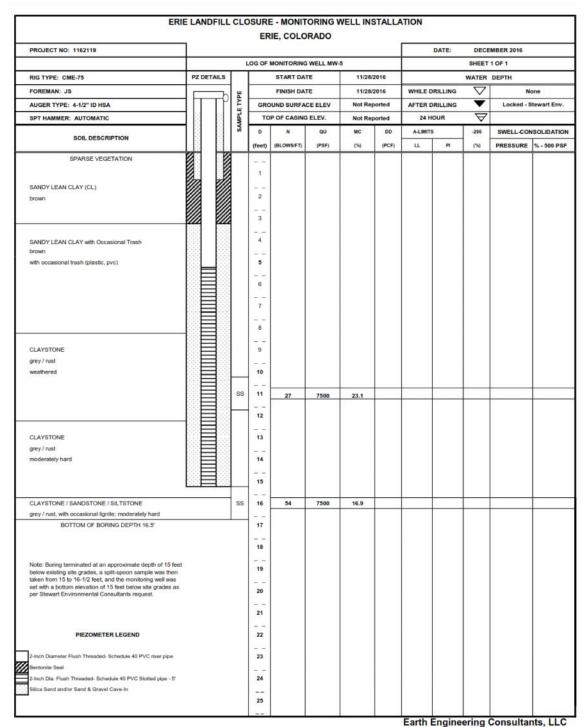


Figure 1-8 Earth Engineering Test Boring SEC MW-5

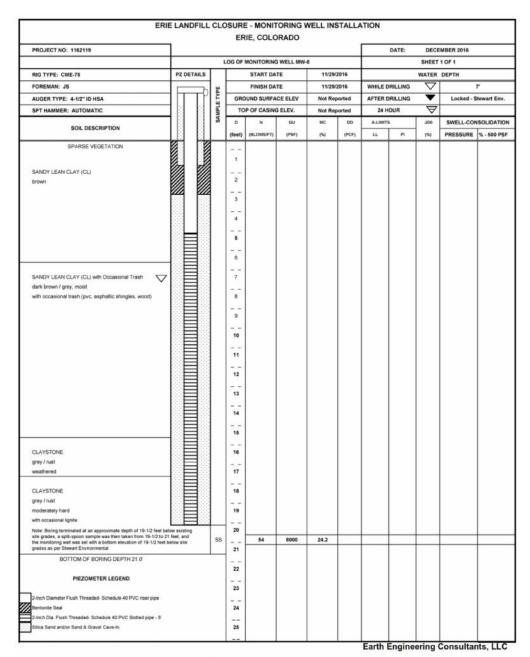


Figure 1-9 Earth Engineering Test Boring SEC MW-6

The shallow groundwater regime is shown with isopleths on Figure 3-1. This figure indicates shallow groundwater flow to the west. Several of the Quest wells were drilled to a deeper depth of approximately 70 feet from the surface. These are Quest wells QMW-14 (70 feet depth), QMW-15 (69 foot depth) and QMW-17 (69 foot depth). In the December 2016 sampling event, these wells were either dry (QMW-14 and QMW-15) or were not capable of recovery during the sampling event (QMW-17 the wells were bailed dry and did not recover within 72 hours). Therefore, it is difficult to determine if this lower groundwater surface exists at the site.

In 2016, Quest installed temporary wells to determine the conceptual potential for an indication of contamination at the site. These wells were not specifically logged with a hollow stem auger and the drill cuttings were used to help with the compact of the well bore. Slotted PVC pipe was installed to assist in obtaining groundwater samples. These wells were sealed at the time of installation at the surface with bentonite clay pellets. Due to loose compaction of the backfill in the upper area of the well, the pellets are likely suspect in keeping surface water from entering the well. Accordingly, these temporary wells were useful for obtaining a general idea about the groundwater but the data from these wells should be considered carefully. These wells were never intended to be capable of distinguishing between groundwater in a perched zone versus the groundwater in a deeper zone. Moving forward, these wells will either be replaced or closed. This will be discussed in a separate document for future work at the site.

This shallow groundwater investigation also identified two potentially separate shallow groundwater areas. There is a shallow groundwater area to the east and west sides of the Work Area. These areas are separated by dry wells (Q MW 1, QMW-2, Q MW-4, Q MW-6, Q-MW-7, Q MW-10, Q-MW12, Q MW-15, SEC MW 3A, SEC MW-4). The following wells were dry in the December 2016 sampling event (Q MW-11, Q MW-13, Q MW-14, Q MW-17 and Q-TB7). At the time of sampling there appeared to be a dry area between the east and west sides of this site in the shallow groundwater.

In addition to the dry wells, there are significant differences in conductivity of these two areas (east side range from approximately 8,000 to 14,000 usim/cm; west side from approximately 5,000 usim/cm to 9,000 usim/cm). However, this could be a seasonal event and during the wetter periods of the year, groundwater could be flowing to the lower area. This potential separation will be investigated and confirmed with additional shallow groundwater investigation.

During December sampling events, all wells were bailed. This well development technique is discussed in the plan deviation summary in Section 3.7 of this report. Due to the silt load found in the wells, the pump was not able to evacuate the wells without additional issues of plugging. The manufacturer cautioned us on using this pump (Grunflos submersible pump) under these conditions. It was determined that bailing the wells would be a better option.

## 2.0 SITE INFORMATION

# 2.1 Site Location and Description

The Work Area is part of a larger property owned by Stratus and its approximate location is west of Weld County Road (WCR) 5 and south of WCR 6. Figure 2.1 outlines the larger property.



Figure 2-1 – Site Location and Work Area

The northern portion of the site is the Work Area for this project. The Work Area is identified in Figure 2.1 by the area in light blue. The Work Area consists of the following basic topographic areas:

- The previous landfilling area appears to be in the "valley fill" areas of the Work Area. This is in a general northeast southwest direction.
- The shallow groundwater flow appears to be to the west down the paleo channel based on the survey information and groundwater well information described herein. While the flow is towards the west, there

potentially are two shallow groundwater basins. As noted in Section 1 above, the two areas are separated by dry areas between the basins and the groundwater within the two the shallow groundwater have significantly different specific conductivities. This information is discussed in Section 3 of this report.

- Surface water flows west down the valley of the Work Area. Before the landfilling activity at the site, the valley contained a shallow, fairly straight, streambed with a perennial stream. In the 1980's, small dams were added to enhance bird hunting activities at the site.
- The shallow groundwater also has some data which is not consistent. As mentioned above, it appears that that there is a dry area between the east and west shallow groundwater areas. However, in the AG Wassenaar report, it shows shallow groundwater at a very high level in TB-2 after sitting for 24 to 48 hours. In the next phase of shallow ground water investigation, additional wells will be installed to obtain data to understand the potential seasonality of the shallow groundwater regime.
- DRSL identified deeper groundwater in the area. This was found at approximately 100 to 150 feet below the surface. The water quality and flow direction of the deeper groundwater has not been established at this site. This groundwater appears to be associated with the coal seams from the coal seams below the surface. This seam is approximately 150 feet or greater below surface of the Work Area. This has not been investigated as part of this nature and extent and should be addressed in a separate effort.

# 3.0 GROUNDWATER MONITORING WELL INSTALLATION, GROUNDWATER ELEVATIONS AND SOLID WASTE TRENCHING LOCATIONS

#### 3.1 Groundwater Well Locations

The final shallow groundwater well locations are found in Figure 3-1 (Report Folder). These well locations include the Quest wells, the Soil Vapor wells from previous investigations, the Tetra Tech wells and the new Stewart groundwater monitoring wells that were approved as part of the work plan dated November 10, 2016. Minor changes to these locations were determined during the investigation in the field due to site constraints. The most significant change was made in conjunction with Mr. Stovall of CDPHE while at the site. SEC MW-3 became a nested well (SEC MW-3A and 3B) due to the groundwater levels in the Quest wells and the lack of water observed in the first well for SEC MW-3A. SEC MW-3A did not show any groundwater in the December sampling event. In January, SEC MW-3A was still dry. SEC MW-3B was placed slightly to the north of SEC MW 3A and placed 10 feet deeper. As a result of this deeper placement, water was obtained in this well. These wells were surveyed by a PLS and is found in Appendix D.

SEC MW-4 was originally drilled in the location as approved. However, the well was moved further to the west due to the lack of water and placed close to the surface water pond to confirm the groundwater surface elevations. However, SEC MW-4 remained dry at the time of the groundwater sampling events in November 2016 and water level measurements in December and January 2017.

The groundwater map provides spot groundwater surface elevations for each well. The Q MW 3, Q MW14 and Q MW17 were not included in the groundwater surface mapping. This is due to the much lower piezometric elevations of this groundwater surface. The lower piezometric surface and dry wells could be due to numerous factors including:

- Surface infiltration of the well which when bailed, did not have groundwater that the well would see in the recovery time of 72 hours. These wells did not have a good surface seal which could allow for surface water infiltration.
- 2. Seasonality of the shallow groundwater levels. During the low periods of surface precipitation, the shallow groundwater levels could lower resulting in the dry wells
- 3. The Quest wells were installed as temporary wells. These were not designed or installed for long term use and could have clogged.
- 4. The water yield of the claystone bedrock could be very low, resulting in low recovery of a greater time period than 72 hours.

As part of the continuing effort on this project, we will again sample and obtain groundwater levels to obtain a better understanding of these issues. Some of the Quest wells will be closed, replaced and/or resampled. Information on this effort will be provided under separate cover after review by CDPHE of this report.

## 3.2 Groundwater Well Installation

The groundwater monitoring well installation was completed by Drilling Engineers of Fort Collins with Earth Engineering, acting as the geotechnical engineer, providing the soil boring logs and oversight on the well installation. The well installation consisted of a PVC stem and utilized a PVC 0.01 inch slotted screen. The wells have a non-shrink grout near the surface and bentonite seal to prevent any surface water from entering the well. All drilling logs are included in Appendix B.

All of the monitoring wells were developed utilizing a NELAC certified HDPE bailer. As noted previously, this was a deviation from the proposed plan due to the amount of silt in the groundwater wells. The bailing of the wells included both the original Quest wells and the new SEC wells. Well development was documented in the field notes provided in Appendix C. The water was withdrawn from the well until a constant conductivity, ORP and pH were obtained. Consistent with the sampling and analysis plan, a minimum of at least 3 to 5 well volumes were withdrawn from the well. All water from the groundwater well development was placed into drums and were disposed of into the sanitary sewer system in Fort Collins. The discussions with the POTW were on the amount of water to be disposed of (less than 20 gallons) and the water quality provided was from the groundwater results. This was given verbal approval. The water from MW-2 was held for disposal with laboratory wastes with Clean Harbors. This occurs approximately every 90 to 180 days.

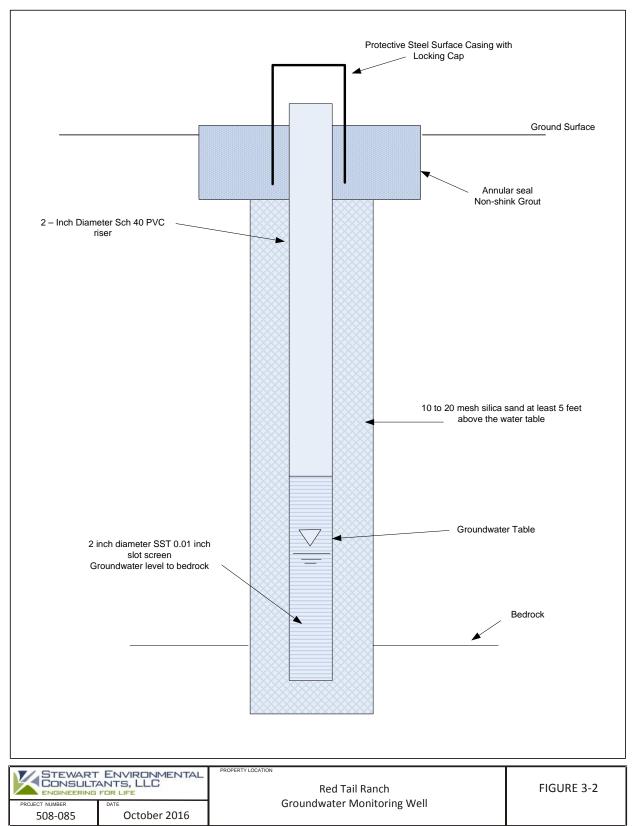
As the wells were installed, split spoon soil samples were obtained during the drilling operation. All waste soils were containerized for proper disposal. The sampling results of these soils are found in Appendix C. All of the soil samples have been found to be non-hazardous based on 40 CFR 216 characteristics. However, additional characterization will be required which will include reactivity, ignitability and TCLP constituents, such as pesticides and PCB's. This soil, if it is still non-hazardous by characteristics, will be disposed of at an approved solid waste disposal facility, most likely, Front Range Landfill in Erie Colorado.

Figure 3-2 provides a diagram of this well construction used in this investigation.

Figures 3-3 (Figure folder) provides the estimate of the solid waste at the site. This also provides the location of the test pits. The test pits were dug to a depth of 2 to 3 feet. In each test pit, we found trash at a depth of 1 to 2 feet and then closed the test pit. This defines the aerial extent of the solid waste.

Figure 3-4 (A through H) (Figure folder) provides the extent of the organic contamination. This is based on the December 2016 groundwater sampling data and the groundwater results to date. These areas of contamination might change in the future based on additional data.

Figure 3-5 (Figure folder) provides the estimated extent of the MEK soil contamination. This is based on the December 2016 groundwater sampling data and the groundwater results to date. These areas of contamination might change in the future based on additional data.



wp files\4263.001\figure 1 - site location.cdr

## 3.3 Quality Assurance/Quality Control Summary

The QA/QC for this report is found in the Appendix C, laboratory reports. We did not have any specific issues with hold times, sampling handling or issues with the various lab reports.

#### 3.4 Test Pits for Solid Waste Extent

Test pits were placed at the site to determine the extent of solid waste disposal. These test pits were excavated by JB Sittner Excavation and were documented by Stewart. During this operation solid waste was identified, however no suspect materials were observed and no additional sampling was undertaken.

The location of the test pits is provided in Figure 3-3. The location of the test pits are approximate and will be located by Stewart Environmental in the field and then surveyed by the PLS for accurate locations during the next phase of the investigation.

Stewart Environmental utilized the previous aerial photos (1978) to identify the starting locations and then in the field was able to determine the extent of the solid waste. Pursuant to the approved work plan, only the lateral extent of the waste was determined, not the depth.

The 1978 aerial photograph is also a very good indication of the extent of the solid waste. This is shown in Figure 3-3 and matches the solid waste found in the test pits.

Previously, the Stewart and Tetra Tech reports provided information on the soil vapor contamination at the site. This data is provided in Appendix A. This data indicates that there were solvents in the area next to the DRSL. However, in the subsequent 2007 study by Stewart, there were not any VOC's found above regulatory levels. This was found to be the same in the 2011 report by Stewart.

## 3.5 Surface Water Ponds

There are two surface water ponds that currently exist on the site. During the two sampling events in December and January at the site, the surface water was frozen. The surface water was sampled on February 22, 2017. The results do not indicate contamination of the surface water in this area. The detection limit for 1,4-Dioxane was high when compared to other testing at the site. In the next phase of investigation, the detection limit for 1,4 Dioxane will be reduced using a SIM GC/MS laboratory method.

Pentachlorophenol was found in the sediment but it was between the method detection limit and the practical quantification limit (J modifier at 0.004 mg/kg). See the results of this sampling which are included in Table 5-1. We do not believe this sediment or pentachlorophenol requires additional investigation at this time.

## 3.6 Organic Contamination Investigation

Organic contamination was located in the area of SEC MW-2. Soil sampling results are provided in Appendix C. The locations of the test pits as approved in the December 29, 2016 addendum are shown in Figure 3-5. The depth of this material starts at approximately 4 to 5 feet below the surface and continues to just above bedrock at 9 to 10 feet. On average, the thickness near SEC MW-2 was 5 feet. Further out from the well, on a 60 foot radius from the well, the thickness decreases to one to two inches.

In order to calculate the volume of contaminated material, we used a radius of 90 feet and an average thickness of 2.5 feet. This results in a volume of approximately 2,000 cubic yards as a conservative estimate.

Two additional test pits were excavated, one to the north and one to the south of SEC MW-2. These test pits were to provide information on any other organic contamination areas. These areas are identified on Figure 3-5. The other two areas that were investigated showed contamination as indicated on the Figure 3-5. It is believed, based on site conditions that solvents were disposed of at the site in the following methods:

- 1. Burial of the actual drums
- 2. Dumping of the solvents into a pit
- 3. Land application of the solvents.

It is believed that area around SEC MW-2 was the location for the burial and placement of solvents in an excavated low area. The areas around SEC MW-3A and 3B and Q MW-9 are the likely locations of land application of solvents. This will be confirmed in the next phase of this investigation.

One buried drum was found at the site. This was approximately 60 feet east of SEC MW-2. The location is identified on Figure 3-5. The material in the drum was sampled an analyzed for organic contamination. The drum contained a mixture of MEK (53%) and Toluene (0.27%). There could have been other solvents present but due to the high concentration of the MEK and Toluene mixture, the other compounds are masked in the test method. This material is characteristically hazardous per 40 CFR 261 (D035). These results are found in Appendix C. As agreed with CDPHE, additional identification of solvents in this barrel is not required. However, the soil surrounding the solvent drum will need additional investigation. Investigative results will be reviewed with the Hazardous Waste Division of CDPHE for concurrence on handling this material. Handling options for this material that will be discussed with the Hazardous Waste Division are (1) shipment from the site to an approved disposal facility, (2) stabilization on site and disposal in a solid waste approved landfill; (3) on-site bioremediation and on site disposal; and (4) capping the material on site. Recommendation of the option(s) chosen will be based on concentrations of organic contamination in the soil, which recommendations will be submitted to CDPHE for approval.

The soil vapor testing in this work area did not indicate VOC contamination. The soil vapor contamination was only on the north side of the site and was attributed to the landfill operations to the north at the time of the study. This is consistent with the CDPHE RPA of the material disposed of at the landfill.

#### 3.7 Plan Deviations

The plan deviations from the approved plan and this report are as follows:

- The SEC MW-3 was made into a nested well. The original well was placed and did not produce any
  groundwater. Therefore, during the installation process, a deeper well was drilled and produced water
  at a depth of 25 feet. This was similar to the depth of the Quest wells.
- 2. The well location of SEC MW-4 was moved from the original location to 50 feet to the west in an attempt to find groundwater. The depth was 25 feet, which is similar to the AG Wassenaar boring. However, water was not located. The boring was noted as SEC MW-4A and SEC MW-4B. Since a well was not installed at SEC MW-4A, we have labeled this well as SEC MW-4 only.
- 3. The drilling program was to include PID readings during the operation. The PID meter on site was not working property and therefore was not used.

- 4. The Test Pits were located by GPS coordinates on site. These are accurate to +/- 15 feet and might differ from the surveyed locations.
- 5. The surface water was not sampled in December 2016 or January 2017 due to weather ice conditions per the approved plan. This area was sampled in March 2016 when the ice was removed.
- 6. The groundwater wells were to be developed using a groundwater pump. Due to the sediment in the groundwater wells, the manufacturer of the pump did not recommend this for this sampling period. A disposable bailer was used on this site.
- 7. The testing of the solvent drum, due to the high organic content of MEK and Toluene, was not able to detect other solvents which might be present. Due to the high concentration, additional investigation of chlorinated solvents in the drum will not be performed. However, additional testing for characterization of this material under 40 CFR 261 will be performed. This will be further investigated in the next round of sampling. This will include the parameters agreed upon by CDPHE.
- 8. The solvent drum surrounding soils were tested for hazardous characteristics of 40 CFR 261 for the volatile and semi-volatile compounds. The other characteristics will be tested in the next phase for a complete analysis of the hazardous characteristics.
- 9. The approved work plan called for the testing of Appendix IA and II plus the following compounds:

```
    Freon 113
    Tetrahydrofuran (THF)
    Propylene Glycol Dinitrate (propellant)
    1,4-Dioxane
```

A lab could not be located to provide testing for Freon 113 or Propylene Glycol Dinitrate. These two compounds were not tested. The other parameters are as follows:

The tests that were not run per Appendix IA and II are SW-846 methods 8015 and 8060 from the organic testing requirements and cyanide.

## 4.0 SAMPLING AND WATER QUALITY RESULTS

# 4.1 Introduction

A summary of all of the testing results is found in Table 5-1. This table provides the information on the shallow groundwater, surface water, sediment and soil testing results. It also provides the hazardous waste characterization testing results. Except as noted below, all of the testing indicates that the soils and shallow groundwater samples taken to date are non-hazardous for VOC and metals per 40 CFR 261. However, the one drum that was discovered on the site was classified as characteristically hazardous and the soil within a 5 foot radius of this drum should be considered characteristically hazardous. All soil and groundwater samples will be analyzed for ignitability, reactivity, pesticides, herbicides and PCB's during the next phase of the investigation.

Except as noted above regarding sampling for pesticides, herbicides and PCBs, all sampling and analysis performed at the site followed the criteria of the written plan contained in the approved work plan. All field sampling activities are documented in Appendix C. The quality assurance (QA) procedures contained in the approved work plan for field sampling and laboratory analysis were followed as part of this investigation.

# 4.2 Groundwater Monitoring and Sampling

All existing Quest monitoring wells and the new SEC monitoring wells were sampled. All wells were developed by extracting at least 3 well volumes until a constant pH, conductivity and ORP were obtained. This information is summarized in Table 4-1. This table includes the well location, internal depths to water, standing water volumes, temperature, dissolved oxygen, conductivity, pH and ORP measurements.

Sampling started at the least contaminated well, SEC MW-6. The area around the well head was encircled with a disposable drop cloth to help keep sampling equipment clean and off the ground.

One "Groundwater Sampling Form" was completed for each well or logged in the computer on site in the field. The completed forms are found in Appendix C or noted on the Table 4-1 if logged by the computer in the field.

The field sampling personnel used disposable gloves throughout purging and sampling. A new pair of gloves was used at each well and was changed if anything other than decontaminated equipment was handled.

A decontaminated water level probe was used to measure the depth to water to the nearest 0.01 foot. Depth to water was measured from the north side of the top of casing. Top of casing and top of rim elevation difference was measured and compared to existing survey data to determine if settlement had occurred.

All decontaminated water was disposed of with the purge water as noted in Section 3 of this report.

The field notes for all of the SEC Wells and the Quest wells were taken either on the field computer with the information presented in the spreadsheet or were taken on handwritten field notes (included in Appendix C). If the well was dry, it was noted but not logged on the field notes.

The field sampling personnel noted the depth to water on the "Groundwater Sampling Form" or in the computer spreadsheet. This included the measured total depth of the well, and calculated at least three well casing volumes. Disposable bailers were used with a new bailer per well. The disposal bailers were all NELAC certified and made of HDPE material.

Well purging consisted of bailing at least three well volumes until field parameters stabilized. The field parameters included pH, ORP, temperature and conductivity. Actual purge water amounts were calculated in the field based on depth to water measurements made at the time of the sampling event.

Purge water was collected and placed into 5 gallons sealed buckets on the surface. In discussion with the POTW for the disposal of the purge water (approximately 20 gallons), it was determined that the sample results for the groundwater analysis was sufficient and verbal approval was provided for disposal from the pilot facility location at 101 North Link Lane, Fort Collins, CO 80525. Disposal occurred on March 16, 2017.

If a well was purged to dryness or was purged such that full recovery exceeds two hours, the well was sampled as soon as a sufficient volume of water had entered the well to enable the collection of samples. In the case of

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QMW14 and QMW17, the wells were bailed dry and did not recover within 72 hours; therefore, no sample could be obtained. On all subsequent field sampling events, additional samples will be collected if possible. The wells for QMW14 and QMW17 were still dry. Field parameters were measured and recorded before sampling.

All wells at this site were sampled within a 4-day period.

Groundwater elevations were measured on the day of sampling for an evaluation of the direction and flow of groundwater. As noted above, this was within a 4 day period.

		Internal		Detph									
			Total Well	Standing	Gallons per	3 Well Vol							
Well Location	Casing Dia	Water	Depth	Water (Ft)	foot	(Gal)	Temp C	DO	Cond	рН	ORP	Notes	
SEC MW-1	0.167	12.25	17.42	5.17	0.16	0.84	13.6						
							14		3700				
							13.3	3.67	3884	7.08	211		
SEC MW-2	0.167	8.8	18	9.2	0.16	1.50	12.3	4.26	8064		21		
							12		8722	7.96	20.3		
							13.7	4.32	9108	7.46	13.9		
SEC MW-3A - Dry													
SEC MW-3B	0.167	24	27.75	3.75	0.1632	0.612	12.6	4.16	11069		227	Field notes on	
							12.2	3.82	11307	7.04	226	computer	
							12	4.22	11433	7.02	227	compater	
SEC MW-4 - Dry													
SEC MW-5	0.167	15	18	3	0.16	0.49	13.2	4.48	7368		13.8		
	1						12.9	3.97	7363	7.62	12.1		
							12.7				13		
SEC MW-6	0.167	12.75	23	10.25	0.16	1.67	15.9		5512		28.6		
							14.8	4.43	5353		20.7		
							13.6	3.52	5459	7.02	-9.09		
Q-MW-1 - Dry													
Q-MW2 - Dry							12.2	3.55	14319	6.84	121.6		
													Bailed Dry - Recovery
Q-MW-3	0.167	41.2	50	8.8	0.16	1.45	12.4	3.12	14259	6.75	120.5		within 2 hours
Q-MW-4 - Dry			95										
Q-MW-5	0.167	15.7	29	13.3	0.16	2.17	14.2	3.54	10429	7.36	121.5		
							13.1	2.03	9728	7.34	114.4		
							13.4	2.08	9827	7.24	115		
Q-MW-6 DRY													
Q-MW-7 DRY													
Q-MW-8	0.167	9.3	27.4	18.1	0.16	2.95	13.3	4.59	9197	7.32	11.7		
							13.1	3.68	9128	7.45	9.2		
							13.4	2.63	9320	7.09	-10.2		
Q-MW-9	0.167	8.7	21.9	13.2	0.16	2.15	13.4		7687	6.94			
							12.6	3.23	7727	7.06	25.3	Hand Written Field Notes	
							13.7	2.23	10270	6.9	18.1	notes	
Q-MW-10 - Dry													
Q-MW-11 - Dry		]											
Q-MW-12 - Dry													
Q-MW-13- Dry													
													Bailed Dry - No
Q-MW-14	0.167	68.2	71.2	3	0.16	0.49	10.8	5.04	8234	7.14	10.9		Recovery in 72 hours
Q-MW-15- Dry													
Q-MW-16	0.167	17.2	31.8	14.6	0.16	2.38	13	3.52	9369	6.96	16.1		
							12.9	2.82	9456		10.4		
							12.5	2.37	9630		6.7		
													Bailed Dry - No
Q-MW-17	0.167	68.4	70.6	2.2	0.16	0.36	10.9	4.32	9128	7.28	11.3		Recovery in 72 hours
Q-TB-7 - Dry													
•													

Table 4-1 – Field Sampling Data

Each sa	ample was labeled as it is collected. Each sample label included, at the minimum, the following information:
	Date of the sample collection
	Time of the sample collection
	Site and well location
	Sample identification (Monitoring Well number)
	Name of the person collecting the sample
Additio	nal information that was included on the label includes:

Analysis to be performed
Preservative, if any, in the sample container
Type of sample (i.e., groundwater, trip blank, etc.)

An indelible marker was used to write on sample labels.

## 4.3 Sample Handling

Each cooler of samples had its own chain-of-custody form completely filled out. The chain-of-custody forms are included with the laboratory results in Appendix C.

The chain-of-custody form accompanied the samples from sampling through analysis and documented all parties who handled the samples. The original is kept on file at the analytical laboratory where samples are analyzed. Chain-of-custody forms are important documentation and are used as evidence of proper sample control if questions arise regarding sample results and quality control.

#### 4.4 Decontamination Procedure

Field equipment was decontaminated by washing in a detergent solution (Alconox and water), rinsing with tap water, and final rinsing with distilled water. Small equipment items were rinsed in buckets or by using a wash bottle; larger items were rinsed in buckets. Decontamination water was collected and tested to determine proper disposal methods.

Decontaminated probes and equipment were wrapped in aluminum foil to keep them clean or placed on the drop cloth for immediate use.

## 4.5 Field Equipment Calibration Procedures

Field equipment requiring calibration were calibrated to known standards, in accordance with the equipment manufacturers' recommend schedules and procedures. Calibration of the water monitoring meters (conductivity, temperature, pH and dissolved oxygen) was performed at least daily. The Photo Ionization Detector (PID) was also calibrated on site as necessary per the manufacturer's recommendations. If equipment was not capable of being calibrated, then work stopped until it was replaced.

## 4.6 Chemical Analysis

CDPHE Appendix 1A and II of the solid waste regulations provide for chemical analysis requirements, except as noted. In the initial sampling of the groundwater monitoring wells and the surface water sites, all water samples were tested in accordance with Appendix 1A (6 CCR 1007-2 Part 1 – latest edition) and Appendix II. In addition, the following specific compounds were to be tested per the approved plan:

```
    Freon 113
    Tetrahydrofuran (THF)
    Propylene Glycol Dinitrate (propellant)
    1,4-Dioxane
    Organic compounds from test methods 8015, 8060,
    Cyanide in some samples
```

THF and 1,4-Doxane was tested as part of this investigation. We were not able to fine a lab to perform with testing on the Freon 113 and Propylene Glycol Dinitrate. Not testing the Freon 113, Propylene Glycol Dinitrate, Organic compounds from SW-846 methods 8015 and 8060 and cyanide is a deviation to the approved work plan.

The remaining chemical analysis was performed in accordance with the rules and regulations prescribed by CDPHE for groundwater analysis. Specifically, this work plan included the organic testing for 8260 and 8270, which covered the majority of the organic compounds. This analysis was performed by a laboratory certified by the State of Colorado for drinking water analysis.

# 4.7 Statistical Analysis

There is not enough data at this site at this time to perform any statistical analysis of the data.

## 5.0 DATA RESULTS

The groundwater and soil results are presented in Table 5-1 and Appendix C. These results show the following:

- 1. The previous results were similar to this sampling round for the Quest wells.
- 2. The new SEC wells provided the following information:
  - a. It appears based on this investigation that there may be two distinct areas of shallow groundwater contamination. The east side of the site and the west side of the site. These are identified in Figure 3-1. Additional sampling during the next phase of investigation will provide additional information related to the connectivity of the two areas of contamination
  - b. Subject to the results from the next round of sampling, it appears that the shallow groundwater regime on the east side of the site has different water quality issues. The salt content is higher in the east wells. The organic content is also higher and exceeds groundwater standards for the following compounds:

- i. Toluene (high concentrations in soil and groundwater near SEC MW-2)
- ii. MEK (high concentrations in soil and groundwater near SEC MW-2)
- iii. 1,4 Dioxane
- iv. Chlorinated solvents exceed groundwater standards in several locations. Please see notes in Table 5-1
- v. Nitrate values exceeding groundwater standards near SEC MW-3B
- c. The shallow groundwater on west side of the site has the following compounds:
  - i. Chlorinated solvent contamination in well SEC MW-5
  - ii. Nitrate values near SEC MW-6 exceed the values in the shallow groundwater on the east side of the Work Area.
  - iii. The shallow groundwater quality for the west side is a lower conductivity than the groundwater quality on the east side of the Work Area
- d. Soil contamination exists in the area of SEC MW-2 on the east side of the Work Area. Approximately 30 feet to the east of SEC MW-2 a solvent drum was found was located. In addition there is soil contamination to the north and south of this area. Table 5-1 describes the contaminants in this area.

French 11   French 12   French 13   French		Sample Loc			e												
All Values are in egit	Parameter																
11.10C    11.1		16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr				16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec
Free no. 13	VOC's (Method 8260)							- 1	All Values	are in ug/l							
Free no. 13   13   13   13   13   13   13   13	1-1, DCE									ND			295				
Trans 12-OCC   13-DCA   13-DCA																	
13.10 CA   Chicaricom (1651)   Chicaricom (1652)   Chicaricom (1655)   Chicaricom (1																	
Cist   2-DeC   Chlorofrom   C																	
Chlorofform   Albatilane (MRK)   Abutanown (MR	1,1-DCA									ND	ND	10.0	<100				
2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	Cis-1,2-DCE									ND	ND	31.0	107				
Separation   Dy - No   D	Chloroform									ND	ND	3.60	<100				
	2-Butanone (MEK)									ND	ND	ND	<100				
Tichicorechimene (TCF)   Toliuses   Petrachicorechimene (PCF)   Telephagorium (PCF)	4-Isopropyltoluene	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	ND	ND	3.60	<100	Dry - No	Dry - No	Dry - No	Dry - No
Trichiocethiene (TCS) Totluene Tetrachocethiene (Perc) Tetrachocethiene (Perc) Tetrachydorizan (HS) Viryi (Chloride Wykness - Total Benzene Be	1,1,1-TCA	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	ND	ND	16.0	<100	Sample	Sample	Sample	Sample
Tetrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)	Trichloroethlene (TCE)										480	3,000	3,590				
Tetrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)   Etrahydrofund (Perc)										ND	ND	ND	<100				
Tetrahydrofuran(1HF)   Vivi) (Chloride   Wilson   Chloride   Wilson   Chloride   Wilson   W																	
Viny (Chloride   Viny																	
No																	
Benzene   Benz																	
Remaining VOC's are NO																	
SOC's (Method 8270)   SOC's (Method 8270)																	
1.4 - Dioxnace   Benzoic Acid   Benzoic Acid   Benzoic Acid   Dry - No   Dry - No   Sample	Remaining voe sare ivo									140	IVD	NU	1100				
1.4 - Dioxnace   Benzoic Acid   Benzoic Acid   Benzoic Acid   Dry - No   Dry - No   Sample																	
1.4 - Dioxnace   Benzoic Acid   Benzoic Acid   Benzoic Acid   Dry - No   Dry - No   Sample	SOC's (Mothod 9270)								All Values	oro in ua/l							
Sency al chol			l				l .	· ·	l values	le ili ug/i			40 N				
Bency al canchol   Bency   Ample   Sample   Sa	•																
Sample   S		D=- N=	Dec. No.	Dec. No.	Dec. No	D=- N=	Dec. No.	D N-	Dec. No.					Dav. No.	Day Na	Dec Ne	Dec. No
2-Methylphenol   Remaining SOC's or ND   Dry																	
Remaining SOC's are ND		Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample					Sample	Sample	Sample	Sample
Total Organic Carbon   Dry																	
Metals	Remaining SOC's are ND												<2				
Metals																	
Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminola Barium Barium Cadidium Chromium Copper Cobalt Lead	Total Organic Carbon	Dry	Dry	Dry	Dn/	Dry	Dny	Dry						Dry	Dry	Dry	
Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminony Artsminola Barium Barium Cadidium Chromium Copper Cobalt Lead			Diy	Diy	DIY	Diy	Diy	Diy	Dry				20.0	Diy	Diy	Diy	DIY
Arsenic   Barlum   Beryllium   Caddium			Diy	Diy	Diy	Diy	Diy						20.0	Diy	Diy	Diy	DIY
Barium   B		,	Diy	ыу	ыу	Diy	Diy							Diy	Diy	ыу	ыу
Part	Antimony		Diy	Diy	Diy	Біу	Diy			are in mg/l			<0.03	Diy	Diy	ыу	ыу
Cadmium   Calcium   Calcium   Calcium   Calcium   Calcium   Copper	Antimony Arsenic		Diy	Diy	Diy	Diy	Diy			are in mg/l 			<0.03	Diy	Diy	ыу	Diy
Calcium   Chromium   Copper   Cobalt   Chromium   Chromi	Antimony Arsenic Barium		ыу	ыу	ыу	ыу	UI Y			ere in mg/l  			<0.03 <0.02 0.057	Diy	БТУ	ыу	Diy
Chromium   Copper   Cobalt   Cobalt   Cobalt   Copper   Cobalt	Antimony Arsenic Barium Beryllium		ыу	ыу	ыу	ыу	Diy .					  	<0.03 <0.02 0.057 0.006	Diy	БТУ	ыу	ыу
Copper	Antimony Arsenic Barium Beryllium Cadmium		ыу	ыу	ыу						   	   	<0.03 <0.02 0.057 0.006 0.007	Biy	Diy		Uly
Dry - No Sample   Dry - No S	Antimony Arsenic Barium Beryllium Cadmium			ыу	ыу						   	   	<0.03 <0.02 0.057 0.006 0.007	Diy	Diy		Uly
Lead	Antimony Arsenic Barium Beryllium Cadmium Calcium			biy	ыу						    	   	<0.03 <0.02 0.057 0.006 0.007 521 0.083	Diy	Diy		Uly
Sample   S	Antimony Arsenic Barium Beryllium Cadmium Caldium Chromium			Diy	Diy	DI Y	Diy.				    	    	<0.03 <0.02 0.057 0.006 0.007 521 0.083	Siy		Di y	Uly
Magnesium   Magnesium   Magnesium   Mickel     Potassium   Selenium   Silver     Sodium   Thailium   Magnesium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper							F	All Values a		     	   	<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056				
Potassium   Selenium   Selenium   Selenium   Selenium   Sulfare   Selenium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a			    	<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056	Dry - No	Dry - No	Dry - No	Dry - No
Selenium   Silver   Sodium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.068	Dry - No	Dry - No	Dry - No	Dry - No
Selenium   Silver   Sodium   Sodium   Silver   Sodium   Sodium   Silver   Sodium   Sodium   Silver   Sodium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.068 0.060	Dry - No	Dry - No	Dry - No	Dry - No
Soldium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.068 0.060 270 0.162	Dry - No	Dry - No	Dry - No	Dry - No
Sodium   Thallium   Vanadium   Zinc   Vanadium   Zinc   Vanadium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 34.7	Dry - No	Dry - No	Dry - No	Dry - No
Thaillium   Vanadium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.066 0.060 270 0.162 34.7 2.18	Dry - No	Dry - No	Dry - No	Dry - No
Vanadium	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.068 0.060 270 0.162 34.7 2.18 <0.005	Dry - No	Dry - No	Dry - No	Dry - No
Inorganic Compounds	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Selenium Soliwr Solium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 34.7 2.18 <0.005	Dry - No	Dry - No	Dry - No	Dry - No
Carbonate   Dry - No   Sample   Sampl	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.057 0.006 0.007 521 0.083 0.056 0.068 0.060 270 0.162 34.7 <0.085 2,490 <0.2	Dry - No	Dry - No	Dry - No	Dry - No
Carbonate   Bi-Carbonate   Bi-Carbonate   Dry - No Sample   Dry - No Sample   Sample   Dry - No Samp	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.057 0.006 0.007 521 0.083 0.068 0.060 270 0.162 34.7 2.18 <0.005 2,490 <0.2 0.048	Dry - No	Dry - No	Dry - No	Dry - No
Carbonate   Bi-Carbonate   Bi-Carbonate   Dry - No Sample   Dry - No Sample   Sample   Dry - No Samp	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.057 0.006 0.007 521 0.083 0.068 0.060 270 0.162 34.7 2.18 <0.005 2,490 <0.2 0.048	Dry - No	Dry - No	Dry - No	Dry - No
Bi-Carbonate   Dry - No Sample   Samp	Antimony Arsenic Barium Beryllium Cadmium Cadmium Calcium Chromium Copper Cobalt Lead Magnesitum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.057 0.006 0.007 521 0.083 0.068 0.060 270 0.162 34.7 2.18 <0.005 2,490 <0.2 0.048	Dry - No	Dry - No	Dry - No	Dry - No
Nitrite+Nitrate         Sample         Sample <t< td=""><td>Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc</td><td>Dry - No</td><td>Dry - No</td><td>Dry - No</td><td>Dry - No</td><td>Dry - No</td><td>Dry - No</td><td>Pry - No</td><td>III Values a</td><td></td><td></td><td></td><td>&lt;0.03 &lt;0.02 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 34.7 2.18 &lt;0.005 2,490 &lt;0.048 0.306</td><td>Dry - No</td><td>Dry - No</td><td>Dry - No</td><td>Dry - No</td></t<>	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Pry - No	III Values a				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 34.7 2.18 <0.005 2,490 <0.048 0.306	Dry - No	Dry - No	Dry - No	Dry - No
Sulfate           5,870           5,870            5,870  <	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 34,7 2.18 <0.005 2,490 <0.2 0.048 0.306	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample
ND - Not Detected - MDL Not Reported NA - Not Analyzed	Antimony Arsenic Barium Beryllium Cadmium Cadmium Calcium Chromium Copper Cobalt Lead Magnesitum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.057 0.006 0.007 521 0.083 0.056 0.068 0.060 270 0.162 34.7 2.18 <0.005 2,490 <0.2 0.048 0.306	Dry - No Sample Dry - No	Dry - No Sample	Dry - No Sample	Dry - No Sample
NA - Not Analyzed	Antimony Arsenic Barium Beryllium Cadmium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate Nitrite+Nitrate	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<.0.03 <0.002 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 0.162 0.162 0.048 0.008 4.0005 0.048 0.040 0.048 0	Dry - No Sample Dry - No	Dry - No Sample	Dry - No Sample	Dry - No Sample
NA - Not Analyzed	Antimony Arsenic Barium Beryllium Cadmium Cadmium Calcium Chromium Copper Cobalt Lead Magnesitum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<.0.03 <0.002 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 0.162 0.162 0.048 0.008 4.0005 0.048 0.040 0.048 0	Dry - No Sample Dry - No	Dry - No Sample	Dry - No Sample	Dry - No Sample
	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc  Inorganic Compounds Carbonate Bi-Carbonate Nitrite+Nitrate Sulfate	Dry - No Sample Dry - No Sample	Dry - No Sample				<.0.03 <0.002 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 0.162 0.162 0.048 0.008 4.0005 0.048 0.040 0.048 0	Dry - No Sample Dry - No	Dry - No Sample	Dry - No Sample	Dry - No Sample						
	Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Copper Cobalt Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bii-Carbonate Nitrite+Nitrate Sulfate ND - Not Detected - MDL Not R	Dry - No Sample Dry - No Sample	Dry - No Sample				<.0.03 <0.002 0.057 0.006 0.007 521 0.083 0.056 0.060 270 0.162 0.162 0.162 0.048 0.008 4.0005 0.048 0.040 0.048 0	Dry - No Sample Dry - No	Dry - No Sample	Dry - No Sample	Dry - No Sample						

Table 5-1 – Environmental Testing Summary

	Sample Lo	cation and		ate												
Parameter		Q-M	W5			Q-N	лW6			Q-N	1W7			Q-N	/IW8	
	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec
VOC's (Method 8260)								All Value	s are in ug/	1						
1-1, DCE	ND	ND	ND	<2									NA	ND	25	<100
Freon-11	ND	ND	ND	NA									NA	ND	ND	NA
Freon-113	ND	ND	ND	NA									NA	ND	190	NA
Trans 1,2-DCE	ND	ND	ND	<2									NA	ND	5	<100
1,1-DCA	ND	ND	ND	<2									NA	ND	30	<100
Cis-1,2-DCE	ND	ND	ND	<2									NA	350	800	835
Chloroform	ND	ND	ND	<2									NA	ND	ND	<100
2-Butanone (MEK)	ND	ND	ND	<4									NA	ND	ND	<100
4-Isopropyltoluene	ND	ND	ND	<2	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	NA	ND	ND	<100
1,1,1-TCA	ND	ND	ND	<2	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	NA	ND	ND	<100
Trichloroethlene ITCE)	ND	ND	ND	<2									NA	560	1,100	1,230
Toluene	ND	ND	ND	<2									NA	ND	ND	140
Tetrachloroethylene (Perc)	ND	ND	ND	<2									NA	ND	7	<100
Tetrahydrofuran (THF)	ND	ND	ND	<40									NA	ND	140	<100
Vinyl Chloride	ND	ND	ND	<2				l	l				NA	ND	ND	<100
Xylenes - Total	ND	ND	ND	<2				l	l				NA	ND	ND	<100
Benzene	ND	ND	ND	<1				l	l				NA	ND	ND	<50
Remaining VOC's are ND	ND	ND	ND	<2					1				NA	ND	ND	<100
SOC's (Method 8270)								All Value	s are in ug/	1						
1,4 - Dioxane				<2												43.0
Benzoic Acid				<2												>1
Bencyl alcohol				<2	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No				<1
Bis(2-ethylhexyl) phthalate				<2	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample				<1
2-Methylphenol				<2												<1
Remaining SOC's are ND				<2												<1
								All Malue	are in mg	/1						
								All Values	are in nig							
Total Organic Carbon				16.7	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry				18.4
Total Organic Carbon				16.7	Dry	Dry	Dry				Dry	Dry				18.4
Total Organic Carbon  Metals				16.7	Dry	Dry	Dry	Dry		Dry	Dry	Dry				18.4
				16.7 <0.03	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry				<0.03
Metals					Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry				
Metals Antimony				<0.03	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry				<0.03
Metals Antimony Arsenic				<0.03	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry				<0.03
Metals Antimony Arsenic Barium				<0.03 <0.02 0.029	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry			  	<0.03 <0.02 0.051
Metals Antimony Arsenic Barium Beryllium				<0.03 <0.02 0.029 <0.0005	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry		  	  	<0.03 <0.02 0.051 <0.0005
Metals Antimony Arsenic Barium Beryllium Cadmium	  	  	  	<0.03 <0.02 0.029 <0.0005 <0.003	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	  	   	   	<0.03 <0.02 0.051 <0.0005 <0.003
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium		  	  	<0.03 <0.02 0.029 <0.0005 <0.003	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	  	   	   	<0.03 <0.02 0.051 <0.0005 <0.003
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium		  	  	<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005				All Values	Dry s are in mg	Dry /I			  	   	   	<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt		   	   	<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005 0.005	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No			   	<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007 0.015
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper		   	    	<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005				All Values	Dry s are in mg	Dry /I					   	<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper			    	<0.03 <0.029 <0.0005 <0.003 411 <0.005 <0.005 <0.005	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No		     	     	<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007 0.015 0.027
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium			     	<0.03 <0.02 <0.002 <0.0005 <0.003 411 <0.005 <0.005 <0.002	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007 0.015 0.027 <0.02
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel			       	<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007 0.015 0.027 <0.02 314 0.030
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium			       	<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005 0.005 <0.002 209 0.011 24.0 0.580	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.02 <0.0051 <0.0005 <0.0005 <0.007 <0.015 <0.027 <0.02 314 <0.03 <0.03 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.0000 <0.000 <0.0000 <0.000 <0.000 <0.000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Silver				<0.03 <0.02 <0.002 <0.0005 <0.0005 <0.0005 <0.005 <0.002 <2.0005 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.051 <0.0005 <0.0003 <0.003 <0.001 <0.0015 <0.0027 <0.0027 <0.002 <0.002 <0.000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium				<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005 0.005 <0.002 209 0.011 24.0 0.580	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.051 <0.0005 <0.0005 <0.0003 <0.007 <0.007 <0.012 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Solium Solenium				<0.03 <0.02 0.029 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.002 229 0.011 24.0 0.580 <0.005 1,780	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.051 <0.0005 <0.0003 <0.003 <0.001 <0.0015 <0.0027 <0.0027 <0.002 <0.002 <0.000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00
Metals Antimony Arsenic Barlum Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Silver Sodium Thallium Vanadium				<0.03 <0.029 <0.0005 <0.0003 4111 <0.005 <0.005 <0.002 229 0.580 <0.005 1,780 <0.02	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.051 <0.0005 <0.0003 <0.003 <0.001 <0.0027 <0.027 <0.022 <0.024 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025
Metals Antimony Arsenic Barlum Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium				<0.03 <0.029 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.051 <0.0005 <0.0005 <0.003 40.007 0.0015 0.027 <0.02 40.02 40.02 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.00
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc				<0.03 <0.029 <0.0005 <0.0003 4111 <0.005 <0.005 <0.002 229 0.580 <0.005 1,780 <0.02	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.051 <0.0005 <0.0003 <0.003 <0.001 <0.0027 <0.027 <0.022 <0.024 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds				<0.03 <0.02 0.029 <0.0005 <0.003 411 <0.005 <0.003 <0.003 <0.002 229 0.011 24.0 0.580 <0.005 1,780 <0.02 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0	Dry - No	Dry - No	Dry - No	Dry All Values	Dry s are in mg.	Dry /I	Dry - No	Dry - No				<0.03 <0.02 0.051 <0.0005 <0.003 432 0.007 0.015 <0.003 314 0.030 <0.02 <0.02 <0.02 <0.02 <0.02 <0.05 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.00
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate				<0.03 <0.02 <0.029 <0.0005 <0.003 411 <0.005 <0.005 <0.002 229 0.011 24.0 0.580 <0.005 1,780 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005	Dry - No	Dry - No	Dry - No	Dry - No Sample	Dry s are in mg.	Dry - No Sample	Dry - No	Dry - No Sample				<0.03 <0.02 <0.051 <0.0005 <0.003 <432 <0.003 <0.003 <1.0007 <0.002 <0.002 <1.002 <1.002 <1.002 <1.002 <1.002 <0.002 <0.002 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.0
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate				<0.03 <0.02 <0.029 <0.0005 <0.003 411 <0.005 <0.003 <0.003 <0.005 <0.005 <0.005 <0.005 <1.005 <0.005 <0.005 <0.005 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.000	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 <0.051 <0.0005 <0.003 <0.003 <0.003 <0.003 <0.003 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bil-Carbonate Nitrite+Nitrate				<0.033 <0.0029 <0.0005 <0.0005 <0.0005 <0.0003 <0.0003 <0.0005 <0.0005 <0.0029 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<.0.03 <0.02 0.051 <0.003 432 0.007 0.015 0.015 0.015 0.017 0.015 0.017 0.015 0.027 <0.02 <0.02 0.030 19.0 0.005 1,320 0.005 1,320 0.006 ND ND 915 0.775
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate				<0.03 <0.02 <0.029 <0.0005 <0.003 411 <0.005 <0.003 <0.003 <0.005 <0.005 <0.005 <0.005 <1.005 <0.005 <0.005 <0.005 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.000	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.051 <0.0005 <0.0003 432 0.007 0.015 0.027 <0.02 314 0.030 19.0 <0.02 <0.02 <0.02 0.030 0
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Lead Lead Lead Magnesiium Nickel Introduction Selenium Silver Sodium Thallium Vanadium Lead Lead Lead Magnesiium Nickel Rotassium Selenium Silver Sodium Thillium Vanadium Lead Lead Lead Lead Lead Lead Lead Lead				<0.033 <0.0029 <0.0005 <0.0005 <0.0005 <0.0003 <0.0003 <0.0005 <0.0005 <0.0029 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<.0.03 <0.02 0.051 <0.003 432 0.007 0.015 0.015 0.015 0.017 0.015 0.017 0.015 0.027 <0.02 <0.02 0.030 19.0 0.005 1,320 0.005 1,320 0.006 ND ND 915 0.775
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Soddium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bil-Carbonate Nitrite+Nitrate				<0.033 <0.0029 <0.0005 <0.0005 <0.0005 <0.0003 <0.0003 <0.0005 <0.0005 <0.0029 <0.001 <0.0005 <0.0005 <0.0005 <0.0005 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.00000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0.0000 <0	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<.0.03 <0.02 0.051 <0.003 432 0.007 0.015 0.015 0.015 0.017 0.015 0.017 0.015 0.027 <0.02 <0.02 0.030 19.0 0.005 1,320 0.005 1,320 0.006 ND ND 915 0.775

Table 5-1 Continued – Environmental Testing Summary

	Sample Lo	ation and	Sample Da	ate												
Parameter	·	Q-M				Q-N	IW10			Q-M\	W11			Q-M\	V12	
	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec
VOC's (Method 8260)								All Values	are in ug/l							
1-1, DCE	NA	ND	ND	<100					NA	ND	ND			ND	ND	
Freon-11	NA	ND	ND	NA					NA	ND	ND			ND	ND	
Freon-113	NA	ND	ND	NA					NA	ND	ND			ND	ND	
Trans 1,2-DCE	NA	ND	ND	<100					NA	ND	ND			ND	ND	
1,1-DCA	NA	ND	ND	<100	ļ				NA	ND	ND			ND	ND	
Cis-1,2-DCE	NA	150	3.80	208					NA	ND	ND			ND	ND	
Chloroform	NA	ND	ND	<100					NA	ND	ND			ND	ND	
2-Butanone (MEK)	NA	ND	ND	<100	ļ				NA	ND	ND			ND	ND	
4-Isopropyltoluene	NA	ND	ND	<100					NA	ND	ND			ND	ND	
1,1,1-TCA	NA	ND	ND	<100		Dry - No	Dry - No	Dry - No	NA	ND	ND		Dry - No	ND	ND	Dry - No
Trichloroethlene ITCE)	NA	130	6.10	177	Sample	Sample	Sample	Sample	NA	ND	ND	Sample	Sample	ND	ND	Sample
Toluene	NA	ND	ND	147					NA	ND	ND			ND	ND	
Tetrachloroethylene (Perc)	NA	ND	ND	<100					NA	ND	ND			ND	ND	
Tetrahydrofuran (THF)	NA	270	290	<2000					NA	ND	ND			ND	ND	
Vinyl Chloride	NA	ND	ND	<100					NA	ND	ND			ND	ND	
Xylenes - Total	NA	ND	7.50	<100					NA	ND	ND			ND	ND	
Benzene	NA	ND	2.60	<50					NA	ND	ND			ND	ND	
1,2,4 - Trimethybenzene	NA	ND	5.90	<100					NA	ND	ND			ND	ND	
1,4 - Dichlorobenzene	NA	ND	11.0	<100					NA	ND	ND			ND	ND	
Remaining VOC's are ND	NA	ND	ND	<100					NA	ND	ND			ND	ND	
COCI (24 II 10070)									. ,							
SOC's (Method 8270)								All Values	are in ug/l							
1,4-Dichlorobenzene				4 - J	ł											
1,4 - Dioxane				741												
Benzoic Acid				<2	Dry - No	Dry - No	Dry - No	Dry - No				Dry - No	Dry - No			Dry - No
Bencyl alcohol				<2	Sample	Sample	Sample	Sample				Sample	Sample			Sample
Bis(2-ethylhexyl) phthalate				<2	ł											
2-Methylphenol				<2												
Remaining SOC's are ND				<2												
								All Values	are in mg/l							
Total Organic Carbon				124	Dry	Dry	Dry	Dry	are ming/i			Dry	Dry			Dry
Total Organic Carbon				124	Diy	Diy	Diy	Diy				Diy	Diy			Diy
Metals								All Values	are in mg/l	l.						
Antimony				<0.02	1		·									
Arsenic				<0.03												
Barium				0.078												
Beryllium				0.001												
Cadmium				<0.003	1											
Calcium				266												
Chromium				0.006												
Cobalt				0.034												
Copper				<0.005	١		l									
Lead				0.020	Dry - No	Dry - No	Dry - No	Dry - No				Dry - No	Dry - No			Dry - No
Magnesiium				252	Sample	Sample	Sample	Sample				Sample	Sample			Sample
Nickel				0.058	1	1	1	1								
Potassium				18.6	]	1	l									
Selenium				<0.020	1	1	l									
Silver				<0.005	]	1	1	1								
Sodium				1,910	1	1	1	1								
Thallium				<0.2	]	1	l									
Vanadium				0.021	]	1	l									
				0.116	1	l	l									1
Zinc																
Zinc				<2												
Zinc Inorganic Compounds				<2 2,690	Dry - No	Dry - No	Dry - No	Dry - No				Dry - No	Dry - No			Dry - No
Zinc Inorganic Compounds Carbonate			 		Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				Dry - No Sample	Dry - No Sample			Dry - No Sample
Zinc Inorganic Compounds Carbonate Bi-Carbonate				2,690												
Zinc Inorganic Compounds Carbonate Bi-Carbonate Nitrite+Nitrate				2,690 0.165												
Zinc Inorganic Compounds Carbonate Bi-Carbonate Nitrite+Nitrate				2,690 0.165												
Zinc  Inorganic Compounds  Carbonate  Bi-Carbonate  Nitrite+Nitrate  Sulfate				2,690 0.165												

**Table 5-1 Continued – Environmental Testing Summary** 

	Sample Lo	cation and	Sample Da	ate												
Parameter		Q-M				Q-M	W14			Q-M	W15			Q-M	W16	
VOCI. (14. II. 1020)	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-May	16-Aug		16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-May	16-Aug	16-Dec
VOC's (Method 8260) 1-1, DCE	NA	ND	27.0		NA	ND	ND	All Value	s are in ug,	1			NA	61.0	54.0	107
	NA NA				NA NA	ND	ND						NA NA	ND	54.0 ND	
Freon-11 Freon-113	NA NA	ND 120	8.70 130		NA NA	ND	ND						NA NA	810	2,200	NA NA
Trans 1,2-DCE	NA NA				NA NA	ND	ND						NA NA	ND 810	2,200 ND	<100
1,1-DCA	NA NA	ND ND	ND ND		NA NA	ND	ND						NA NA	98.0	73.0	106
	NA NA	ND ND	ND		NA NA	ND	ND						NA NA	2,500	1,700	3,470
Cis-1,2-DCE Chloroform	NA NA	ND	ND		NA NA	ND	ND						NA NA	2,300 ND	1,700 ND	<100
2-Butanone (MEK)	NA NA	ND	ND		NA NA	ND	ND						NA NA	ND ND	ND	<100
4-Isopropyltoluene	NA NA	ND	ND	Dry - No	NA NA	ND	ND	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	NA	ND	3.80	<100
1,1,1-TCA	NA NA	ND	ND	Sample	NA NA	ND	ND	Sample	Sample	Sample	Sample	Sample	NA	ND	4.30	<100
Trichloroethlene (TCE)	NA NA	ND	ND	Sumple	NA NA	ND	ND	Sample	Sumpre	Sample	Sample	Sample	NA	4,500	2,200	5,930
Toluene	NA NA	ND	ND		NA NA	ND	ND						NA	4,300 ND	2,200 ND	<100
Tetrachloroethylene (Perc)	NA NA	ND	ND		NA NA	ND	ND						NA	ND	14.0	<100
Tetrahydrofuran (THF)	NA.	ND	3.60		NA NA	ND	ND						NA	510	1,000	<100
Vinyl Chloride	NA NA	ND	ND		NA NA	ND	ND		l				NA	120	130	215
Xylenes - Total	NA NA	ND	ND		NA NA	ND	ND		l				NA	ND	ND	<100
Benzene	NA NA	ND	ND		NA NA	ND	ND		l				NA	ND	ND	<100
Remaining VOC's are ND	NA NA	ND	ND		NA NA	ND	ND		l				NA	ND	ND	<100
		5											(	5	5	-200
SOC's (Method 8270)								All Value	s are in ug	/1						
1,4 - Dioxane									<u> </u>							46.0
Benzoic Acid																<20
Bencyl alcohol				Dry - No				Dry - No	Dry - No	Dry - No	Dry - No	Dry - No				<2
Bis(2-ethylhexyl) phthalate				Sample				Sample	Sample	Sample	Sample	Sample				<4
2-Methylphenol										·		· ·				<2
Remaining SOC's are ND																<2
gg																
								All Values	are in mg	/I						
Total Organic Carbon				Dry				All Values	are in mg	/I Dry	Dry	Dry				28.5
Total Organic Carbon				Dry							Dry	Dry				28.5
Total Organic Carbon  Metals				Dry				Dry		Dry	Dry	Dry				28.5
				Dry				Dry	Dry	Dry	Dry	Dry				28.5 <0.03
Metals				Dry				Dry	Dry	Dry	Dry	Dry				<0.03
Metals Antimony Arsenic Barium				Dry			  	Dry	Dry	Dry	Dry	Dry				<0.03 <0.02 0.045
Metals Antimony Arsenic Barium Beryllium				Dry				Dry	Dry	Dry	Dry	Dry			  	<0.03 <0.02 0.045 <0.0005
Metals Antimony Arsenic Barium Beryllium Cadmium			  	Dry		  		Dry	Dry	Dry	Dry	Dry		  	  	<0.03 <0.02 0.045 <0.0005 <0.003
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium			  	Dry		   		Dry	Dry	Dry	Dry	Dry		  	   	<0.03 <0.02 0.045 <0.0005 <0.003
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium			  	Dry		  		Dry	Dry	Dry	Dry	Dry		  	  	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.005
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt				Dry	   	     		Dry	Dry	Dry	Dry	Dry	   	    	    	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.005
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper				Dry Dry - No		     		Dry	Dry	Dry	Dry Dry - No	Dry Dry - No		     	     	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.005 0.048
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead				Dry - No	   	     		Dry All Values	Dry s are in mg	Dry /I				    	    	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.005 0.048 0.028
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium								Dry All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No		     	    	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.005 0.048 0.028 <0.02
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel				Dry - No				Dry All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No		      	        	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.005 0.048 0.028 <0.02 272
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium				Dry - No				Dry All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No			         	<0.03 <0.02 0.045 <0.0005 <0.003 355 <0.004 0.028 <0.02 272 0.042
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No			         	<0.03 <0.02 0.045 <0.0005 <0.0005 <0.0005 <0.0005 <0.0028 <0.028 <0.02 17.9 <0.002
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Silver				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 0.045 <0.0005 <0.0005 <0.0005 <0.0005 <0.0028 <0.028 <0.022 272 0.042 17.99 <0.020 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005 <0.0005
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 <0.005 <0.0005 <0.0005 <0.0005 <0.0005 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Soddium Thallium				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 0.045 <0.0005 <0.0005 <0.003 355 <0.005 0.048 0.028 <0.02 272 272 272 0.042 <0.02 <1.005 1,480 <0.2 <0.05
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Vanadium				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 <0.045 <0.0005 <0.003 355 <0.005 <0.002 <0.028 <0.022 272 272 <0.022 <1.490 <0.028 <0.005 <1.480 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.008
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Soddium Thallium				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 0.045 <0.0005 <0.0005 <0.003 355 <0.005 0.048 0.028 <0.02 272 272 272 0.042 <0.02 <1.005 1,480 <0.2 <0.05
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 <0.045 <0.0005 <0.003 355 <0.005 <0.002 <0.028 <0.022 272 272 <0.022 <1.490 <0.028 <0.005 <1.480 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.028 <0.008
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesitum Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds				Dry - No				Dry  All Values	Dry s are in mg	Dry /I Dry - No	Dry - No	Dry - No				<0.03 <0.02 0.045 <0.005 <0.005 <0.003 355 <0.005 <0.003 <0.003 355 <0.005 <0.002 272 0.042 279 <0.02 <0.005 1,480 <0.2 <0.02 <0.006 <0.006
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate				Dry - No Sample				Dry - No Sample	Dry - No Sample	Dry /I Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.045 <0.0005 <0.0005 <0.0005 <0.0005 0.048 0.048 0.02 272 0.042 17.99 <0.02 <0.005 1,480 <0.02 <0.005  ND
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate				Dry - No Sample Dry - No				Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.020 <0.045 <0.0005 <0.0005 <0.0003 3555 <0.005 <0.002 272 272 20.002 17.9 <0.02 <0.002 1,480 <0.02 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bil-Carbonate Nitrite+Nitrate				Dry - No Sample				Dry - No Sample	Dry - No Sample	Dry /I Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.045 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.002 <0.002 <0.002 <0.002 <0.002 <0.005 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.006 <0.00
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate				Dry - No Sample Dry - No				Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.020 <0.045 <0.0005 <0.0005 <0.0003 3555 <0.005 <0.002 272 272 20.002 17.9 <0.02 <0.002 1,480 <0.02 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate Nitrite+Nitrate Sulfate				Dry - No Sample Dry - No				Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.045 <0.003 355 <0.005 0.048 0.022 272 0.042 17.9 <0.02 <0.005 1,480 <0.02 0.066  ND 1,216 <10 1,216 <10 1,216 <10 1,216 <10 1,480 <10 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216 <11 1,216
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Nitrite+Nitrate				Dry - No Sample Dry - No				Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample				<0.03 <0.02 0.045 <0.003 355 <0.005 0.048 0.022 272 0.042 17.9 <0.02 <0.005 1,480 0.066  ND 1,216 <1

Table 5-1 Continued – Environmental Testing Summary

	Sample Lo			ate				
Parameter			W17			Q-1		
VOCI. (84. II. I 0000)	16-Mar	16-May	16-Aug			16-May	16-Aug	16-Dec
VOC's (Method 8260)	NA	ND	ND	All Values	are in ug/l	ND	6.60	
1-1, DCE Freon-11	NA NA	ND ND	ND ND		NA NA	ND ND	6.60 ND	
Freon-113	NA NA	ND	ND		NA NA	ND ND		
Trans 1,2-DCE	NA NA	ND	ND ND		NA NA	ND ND	32.0 ND	
1,1-DCA	NA NA	ND	ND		NA NA	37.0	61.0	
Cis-1,2-DCE	NA NA	ND	4.1		NA NA	230	130	
Chloroform	NA NA	ND	ND		NA NA	ND	ND	
2-Butanone (MEK)	NA NA	ND	ND ND	Not	NA NA	ND ND	14.0	Not
4-Isopropyltoluene	NA NA	ND	ND	Sufficent	NA NA	ND	ND	Sufficent
1,1,1-TCA	NA NA	ND	ND	Sample	NA NA	ND	14.0	Sample
Trichloroethlene (TCE)	NA NA	ND	5.90	Sumpre	NA NA	610	220	Sample
Toluene	NA NA	ND	ND		NA	ND	ND	
Tetrachloroethylene (Perc)	NA	ND	ND		NA	ND	ND	
Tetrahydrofuran (THF)	NA	ND	ND		NA	ND	10.0	
Vinyl Chloride	NA NA	ND	ND		NA	ND	ND	
Xylenes - Total	NA NA	ND	ND		NA	ND	ND	
Remaining VOC's are ND	NA	ND	ND		NA	ND	ND	
g								
SOC's (Method 8270)				All Values	are in ug/l			
1,4 - Dioxane								
Benzoic Acid				Not				Not
Bencyl alcohol				Sufficent				Sufficent
Bis(2-ethylhexyl) phthalate				Sample				Sample
2-Methylphenol				Sumple				Sample
Remaining SOC's are ND								
Tatal Carrie Carters		- 1		All Values a				u- Cl-
Total Organic Carbon				No Sample				No Sample
				No Sample				No Sample
Metals								No Sample
Metals Antimony				No Sample	 are in mg/l			No Sample
Metals Antimony Arsenic				No Sample	 are in mg/l 			No Sample
Metals Antimony Arsenic Barium				No Sample	 are in mg/l			No Sample
Metals Antimony Arsenic Barium Beryllium				No Sample	 are in mg/l  			No Sample
Metals Antimony Arsenic Barium		  		No Sample	 are in mg/l  			No Sample
Metals Antimony Arsenic Barium Beryllium Cadmium		  		No Sample	 are in mg/l   			No Sample
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium		   		No Sample All Values a	are in mg/l			
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt		   	   	No Sample  All Values a	are in mg/l			Not
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper		    		No Sample  All Values a  Not	are in mg/l		    	Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead		     		No Sample  All Values a	are in mg/l		     	Not
Metals Antimony Arsenic Barium Beryllium Cadmium Caldium Cobalt Copper Lead Magnesiium		      	      	No Sample  All Values a  Not				Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel		     	      	No Sample  All Values a  Not	are in mg/l			Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium		     	      	No Sample  All Values a  Not	are in mg/l			Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium				No Sample  All Values a  Not	are in mg/l			Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Silver				No Sample  All Values a  Not	are in mg/l			Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium				No Sample  All Values a  Not				Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Soddium Thallium				No Sample  All Values a  Not				Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc				No Sample  All Values a  Not				Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds				No Sample  All Values a  Not				Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Sellver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate				No Sample  All Values a  Not	ure in mg/l			Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Caldium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate				Not Sample  Not Sufficent Sample	ure in mg/s			Not Sufficent Sample
Metals Antimony Arsenic Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bil-Carbonate Nitrite+Nitrate				Not Sufficent Sample	ure in mg/I			Not Sufficent Sample Not Sufficent
Metals Antimony Arsenic Barium Beryllium Cadmium Caldium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Bi-Carbonate				Not Sample  Not Sufficent Sample	ure in mg/s			Not Sufficent Sample

Table 5-1 Continued – Environmental Testing Summary

		Groi	anuwater an	d Pond Samp	ne Location a	anu sampie	vale	Pond
Parameter	SEC MW-1	SEC MAN 2	SEC MAN 2A	SEC MW-3B	SEC MW-4	SEC MW-5	SEC MW-6	Sample
	16-Dec	16-Dec	16-Dec		16-Dec	16-Dec	16-Dec	22-Fe
VOC's (Method 8260)	10 500	10 500	10 000		are in ug/l	10 500	10 000	
1-1, DCE	<2	<2000		<20		<2	<2	<
Freon-11	NA	NA		NA		NA	NA	N/
Freon-113	NA	NA		NA		NA	NA	N/
Trans 1,2-DCE	<2	<2000		<20		3	<2	<
1,1-DCA	<2	<2000		<20		<2	<2	<
Cis-1,2-DCE	<2	<2000		<20		7	<2	<
Chloroform	<2	<2000		<20		<2	<2	<
2-Butanone (MEK)	<2	526000		<20	Dry Well -	<2	<2	<
1,1,1-TCA	<2	<2000	No Sample	<20	No Sample	<2	<2	<
Trichloroethlene (TCE)	<2	<2000		<20		10	<2	<
Toluene	<2	68,000		1,190		<2	<2	<
Tetrachloroethylene (Perc)	<2	<2000		<20		7	<2	<
Tetrahydrofuran (TFA)	<2	<2000 <2000	1	<20 <20		<2	<2 <2	<
Vinyl Chloride	<2	<2000 <2000	1	<20		6 <2	<2	<
Xylenes - Total Remaining VOC's are ND	<2	<2000	1	<20		<2	<2	</td
	V.	<b>\2000</b>		<b>~20</b>		12	ν.	
SOC's (Method 8270)			1		are in ug/l			
1,4 - Dioxane	<2	80	ļ	<2		5 - J	<2	<8
Benzoic Acid	<20	70	DryMol	<2	Dec Well	<30	<20	<80
Bencyl alcohol	<2 <4	15	Dry Well - No Sample	<2	Dry Well - No Sample	<3 <5	<2 <4	<20
Bis(2-ethylhexyl) phthalate	<4	133	No Sample		No Sample	<3	<2	
2-Methylphenol Remaining SOC's are ND	<2	<3		9 - J <2		<3	<2	<8 <8
Remaining 500 3 are ND	- 4					,		-
				All Values				
Total Organic Carbon	10.5	568	No Sample	42.6	No Sample	19.4	39.4	63.0
Metals				All Values	are in mg/l			
Antimony	< 0.03	<0.03		<0.03		< 0.03	< 0.03	<0.03
Arsenic	<0.02	<0.02		<0.02		<0.02	< 0.02	<0.02
Barium	0.172	0.092		0.066		0.092	0.062	0.03
Beryllium	<0.0005	<0.0005		<0.0005		<0.0005	0.0053	<0.000
Cadmium	0.008	<0.003		<0.003		<0.003	0.014	<0.003
Calcium	223	231		387		276	427	259
Chromium	<0.005	0.005		<0.005		<0.005	0.018	<0.00
Cobalt	<0.002	0.011		0.005		0.004	0.03	0.002
Copper	0.025 0.059	0.021 <0.02	Dry Well -	0.008	Dry Well -	0.038	0.109 0.104	<0.00
Lead Magnesiium	110	<0.02 256	No Sample	<0.02 244	No Sample	<0.02 134	0.104	<0.02 189
Nickel	0.011	0.024	1	0.03		0.018	0.069	0.008
Potassium	9.66	10.5	1	21.6		14.7	21.9	22.7
Selenium	<0.01	<0.02		0.502		<0.01	<0.02	<0.03
	<0.005	<0.005	Ì	<0.005		<0.005	<0.005	0.00
Silver				-0.000			612	1200
Silver Sodium	538			2120		1510		
Silver Sodium Thallium		1600		2120 <0.2		1510 <0.2	<0.2	<0.2
Sodium	538	1600					<0.2 0.065	
Sodium Thallium	538 <0.2	1600 <0.2		<0.2		<0.2		<0.0 <0.02 0.089
Sodium Thallium Vanadium Zinc	538 <0.2 <0.02	1600 <0.2 <0.02		<0.2 <0.02 0.083	aro ina/	<0.2 <0.02	0.065	<0.02
Sodium Thallium Vanadium Zinc Inorganic Compounds	538 <0.2 <0.02	1600 <0.2 <0.02		<0.2 <0.02 0.083	are in mg/l	<0.2 <0.02	0.065	<0.03
Sodium Thallium Vanadium Zinc	538 <0.2 <0.02 0.086	1600 <0.2 <0.02 0.060		<0.2 <0.02 0.083	are in mg/l	<0.2 <0.02 0.120	0.065 0.693	<0.02
Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate	538 <0.2 <0.02 0.086	1600 <0.2 <0.02 0.060	Dry Well -	<0.2 <0.02 0.083	are in mg/l  Dry Well -	<0.2 <0.02 0.120	0.065 0.693	<0.03 0.089 <2 <0.9
Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Cayanide	538 <0.2 <0.02 0.086	1600 <0.2 <0.02 0.060	Dry Well - No Sample	<0.2 <0.02 0.083 All Values <2 472 38.8	_	<0.2 <0.02 0.120	0.065 0.693 <2 1,941 181	<0.00 0.089 <0.9 <0.9
Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Cayanide Bi-Carbonate	538 <0.2 <0.02 0.086	1600 <0.2 <0.02 0.060		<0.2 <0.02 0.083 All Values <2	Dry Well -	<0.2 <0.02 0.120 <2 820	0.065 0.693 <2 1,941	<0.03 0.089 <1 <0.9 374 <0.1
Sodium Thallium Vanadium Zinc Zinc Inorganic Compounds Carbonate Cayanide Bi-Carbonate Nitrite+Nitrate Sulfate	538 <0.2 <0.02 0.086	1600 <0.2 <0.02 0.060 <2 1,575 <0.1		<0.2 <0.02 0.083 All Values <2 472 38.8	Dry Well -	<0.22 <0.02 0.120 <2 820 ND	0.065 0.693 <2 1,941 181	<0.03 0.083 < <0.1 374 <0.1
Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Cayanide Bi-Carbonate Nitrite+Nitrate	538 <0.2 <0.02 0.086 <2 631 0.369 1,160	1600 <0.2 <0.02 0.060 <2 1,575 <0.1 4,640	No Sample	<0.2 <0.02 0.083 All Values <2 472 38.8 7,100	Dry Well -	<0.2 <0.02 0.120 <2 820 ND 2,180	0.065 0.693 <2 1,941 181 5,870	<0.03 0.089 <0.9 <0.9 374 <0.1 1,190
Sodium Thallium Vanadium Zinc Zinc Inorganic Compounds Carbonate Cayanide Bi-Carbonate Nitrite+Nitrate Sulfate Sulfide Phenol	538 <0.2 <0.02 0.086 <2 631 0.369 1,160 NA	1600 <0.2 <0.02 0.060 -<2 1,575 <0.1 4,640 NA	No Sample	<0.2 <0.02 0.083 All Values <2 472 38.8 7,100 NA	Dry Well - No Sample	<0.2 <0.02 0.120 <2 820 ND 2,180 NA	0.065 0.693 <2 1,941 181 5,870 NA	<0.02 0.089
Sodium Thallium Vanadium Zinc Inorganic Compounds Carbonate Cayanide Bi-Carbonate Nitrite-Nitrate Sulfate Sulfide	538 <0.2 <0.02 0.086 <2 631 0.369 1,160 NA	1600 <0.2 <0.02 0.060 -<2 1,575 <0.1 4,640 NA	No Sample	<0.2 <0.02 0.083 All Values <2 472 38.8 7,100 NA	Dry Well - No Sample	<0.2 <0.02 0.120 <2 820 ND 2,180 NA	0.065 0.693 <2 1,941 181 5,870 NA	<0.03 0.089 <0.9 <0.9 374 <0.1 1,190

**Table 5-1 Continued – Environmental Testing Summary** 

				Soil Testi	ng (Quest). Poi	nd Sediment a	nd Test Pit Sam	ples and TCLP	Results			
Parameter	Quest MW-9 Soil	Pond Sediment Sample	Test Pit 1 - 5 to 6 ft	Test Pit 2 - 5 to 6 ft	Test Pit 3	Test Pit 4	Tost Dit 5	Test Pit 5 - Solvent Drum Sample - TCLP Result	Test Pit 4	Test Pit 4	Test Pit 8 - 5 to 6 ft	Test Pit 9 - 5 to 6 ft
	16-Apr	22-Feb	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan
VOC's (Method 8260)						All Values are	in mg/kg (ppm	) Except Pond	Sample (ug/l)			
1,4-Dichlorobenzene	0.015	<1	<0.17	<0.17			<2,500				<0.17	<0.17
Cis-1,2-DCE	0.016	<1	<0.17	<0.17			<2,500				<0.17	<0.17
1-1, DCE	ND	<1	<0.17	<0.17			<2,500				<0.17	<0.17
Isopropylbenezene	ND	<1	<0.17	<0.17			<2.500				0.316	<0.17
Isoproplytoluene, 4-	ND	<1	<0.17	<0.17			<2,500				0.346	<0.17
Trimethylbenzene, 1,2,4-	ND	<1	<0.17	<01.7			<2,500				0.223	<0.17
Trimethylbenzene, 1,3,5-	ND	<1	<0.17	<01.7	No sample -	No sample -	<2,500		No sample -	No sample -	0.187	<0.17
2-Butanone (MEK)	ND	<1	30.5	41.7	no	no	530,000	26,500	no	no	41.20	28.7
butylbenzene, n-	ND	<1	<0.17	<0.17	indiciation of	indiciation of	<2,500		indiciation of	indiciation of	0.277	<0.17
Trichloroethlene (TCE)	0.020	<1	0.217	<0.17	organics	organics	<2,500		organics	organics	<0.17	<0.17
Toluene	ND	<1	0.185	18.6			2,700	135			0.280	0.200
Tetrachloroethylene (Perc)	ND	<1	<0.17	<0.17			<2,500				<0.17	<0.17
Tetrahydrofuran (TFA)	ND	<1	<0.17	<0.17			<2,500				<0.17	<0.17
Vinyl Chloride	ND	<1	<0.17	<0.17			<2,500				<0.17	<0.17
Xylenes - Total	ND	<1	<0.17	<0.17			<2,500				<0.17	<0.17
Remaining VOC's are ND	ND	<1	<0.17	<0.17			<2,500				<0.17	<0.17
SOC's (Method 8270)					A	II Values are in	mg/kg (ppm)					
1,4 - Dioxane	NA	<8	NA	NA			<2,000				NA	NA
Benzoic Acid	NA	<80	NA	NA	No Sample -	No Sample -	<2,000		No Sample -	No Sample -	NA	NA
Bencyl alcohol	NA	<8	NA	NA	no	no	<2,000		no	no	NA	NA
Bis(2-ethylhexyl) phthalate	NA	<8	NA	NA		indiciation of	<2,000		_	indiciation of	NA	NA
2-Methylphenol	NA	<8	NA	NA	organics	organics	<2,000		organics	organics	NA	NA
Pentachlorophenol	NA	4 - J	NA	NA	organics	Organics	<1,000		organics	Organics	NA	NA
Remaining SOC's are ND	NA	<8	NA	NA			<2,000				NA	NA
						All Values a	re in mg/l					
Total Organic Carbon	NA	1.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B- Detected between MDL and	d PQL											

Table 5-1 Continued – Environmental Testing Summary

- 3. The shallow groundwater regimes in the west and east areas are separated by wells that have been dry during initial rounds of sampling as discussed previously in this report. Additional investigation is needed to determine if the dry wells are due to the location of the wells, seasonality of the groundwater or a true separation of these two groundwater regimes. It could also be a combination of any of these items.
- 4. The soil samples taken in around SEC MW-2 reflect high levels of toluene and MEK. However, these levels are below the TCLP characteristic test and therefore would be classified as a solid waste. Additional testing is needed to determine if this material will also quality for a characteristically hazardous waste including:
  - a. Ignitability
  - b. Corrosivity
  - c. Reactivity
  - d. Toxicity Characteristic (D001 to D043)
    - i. Metals concentrations
    - ii. Volatile and Semi-Volatile organic compounds
    - iii. Pesticides and Herbicides
    - iv. PCB's
- 5. The solvent drum found at the site contains over fifty percent MEK which classifies this material as a characteristically hazardous waste (D035). This material will need to be removed from the site and disposed of at a certified TSDF facility.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

## 6.1 Conclusions

Except as set forth in Section 3-7 which describes deviations from the approved work plan, Stewart Environmental has completed the work plan at the site as approved in the original work plan (as amended). The conclusions based on this investigation are:

- Based on all of the sampling performed to date, there appears to be seasonality of the shallow groundwater regime. On the south side of the site, earlier sampling events indicated that certain wells contained contaminants but the same wells were dry in the December 2016 sampling event and the January 2017 water detection for dry wells investigation.
- 2. Based on earlier studies at the site, together with data obtained from the Quest and SEC wells, there exists a shallow water table, with deeper groundwater levels at the site as shown in QMW14, and QMW17. QMW15 is also a deeper well but has been dry since it was drilled at the site.

- 3. There are several wells that were either dry or intermittently dry during this investigation and earlier investigations.
- 4. One buried intact drum was identified at the site during the test pit excavation. This drum contained solvent consisting primarily of MEK and Toluene. It could contain chlorinated solvents but due to testing constraints this was not determined. Based on earlier investigation and historical photos, additional drums are likely to exist within the Work Area.
- 5. 1,4 Dioxane exists within the shallow groundwater within the Work Area. We cannot conclude at this point if the 1,4-Dioxane has traveled to the deeper groundwater or to the shallow groundwater regimes on the west side of the Work Area due to the high detection limits. This is a very mobile compound and can be a leading indicator of contamination. A GC/MS SIM analysis will be performed in the next sampling round to lower the detection limit.
- 6. Solid waste extent was identified. This is shown on the 1978 aerial photograph in Figure 3-3. This material appears to extend off of the Stratus property to the west.
- 7. Based on the initial round sampling, the surface water found in the pond and the associated sediment does not indicate any contamination.
- 8. Based on the limited evaluation of soil samples, approximately 2,000 yards of organic contaminated soils are located in the vicinity of SEC MW-2.
- 9. The drum containing liquid solvent found at the site is a characteristic hazardous waste (D035).
- 10. In the past, SVE wells have shown contamination near SEC MW-6. However, this was approximately 10 years ago prior to the methane venting system at the DRSL. In 2011, this area did not indicate any VOC contamination.

## 1.2 Recommendations

The recommendations as a result of the completion of this work plan are:

- 1. Additional investigation of the shallow groundwater regime and surface water should be completed. As noted above, the 1,4-Dixoane detection limit was too high and the parameters that were not tested in methods 8015 and 8060 plus cyanide will be added. This investigation would address whether or not: (i) there is additional contamination within the shallow groundwater regime within the Work Area; and (ii) the dry wells on the site are the result of seasonal groundwater issues or evidence two separate shallow groundwater regimes. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort.
- 2. Complete a full analysis of all contaminated soil with in the vicinity of SEC MW-2 as well as all shallow groundwater for all contaminants listed in the Approved Work Plan. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort.
- 3. Conduct a ground penetrating radar study to determine if there are additional intact drums of solvents located within the Work Area. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort.

- 4. Prepare a bedrock mapping effort to determine if the contamination identified within the Work Area impacts any portion of the Stratus Property to the south of the Work Area. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort.
- 5. Develop a conceptual site remediation plan that would address (i) covering the existing solid waste within the Work Area with a natural soil cap; (ii) monitoring of the shallow groundwater regime within the Work Area; (iii) removing and properly disposing of any intact drums (together with surrounding soil) identified during the additional investigation; and (iv) removing or remediating in place the contaminated soil surrounding SEC MW-2 together with other contaminated soil that may be identified during the additional investigations described above. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort.
- 6. Investigate the impact, if any, of the contamination located within the Work Area on the deeper groundwater regimes. Under separate cover, Stratus will be providing CDPHE with a work plan for this effort.





# Results of the Nature and Extent Investigation at the Stratus Redtail Ranch, LLC Erie, Colorado

**Prepared for:** 

**Stratus Redtail Ranch, LLC** Greenwood Village, Colorado

Prepared by:

Stewart Environmental Consultants, LLC
Consulting Engineers and Scientists
Fort Collins, Colorado

February 9, 2016

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Figure 3-2 – Groundwater Monitoring Well Construction

Figure 3-3 – Test Pits and Extent of Solid Waste

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Figure 3-5 – Extent of soil contamination

#### **APPENDICES**

Appendix A: Groundwater Sampling Procedures and Field Notes

Appendix B: Geotechnical Report

Appendix C: Water and Soil Environmental Testing Reports

Appendix D: CDPHE Approvals of Work Plan

#### 1.0 INTRODUCTION

#### 1.1 General Information

The Stratus Redtail Ranch, LLC ("Stratus") property is located in Weld County, Colorado. A portion of this property appears to have been the subject of landfilling activities dating back to the 1960's through early 1970's. Pursuant to a Colorado Department of Public Health and Environment ("CDPHE") approved work plan for investigation of soil and ground water dated November 10, 2016, as amended on December 29, 2016, Stratus conducted a nature and extent investigation. The property on which the investigation was conducted is shown in Figure 1-1 (the "Work Area").



The purpose of this document is to provide the results of the investigation approved by CDPHE to identify the nature and extent of solid waste and groundwater contamination within the work area.

Figure 1-1

#### 1.2 Objectives of CDPHE Approved Investigative Work Plan

The primary objectives of this investigation were:

- 1. To define the groundwater elevations and the extent of groundwater contamination in the Work Area;
- 2. To further define the groundwater flow direction within the Work Area;
- 3. To further define the location of any organic compounds in the soil and groundwater within the Work Area; and,
- 4. To evaluate whether subsurface contamination exists within the Work Area and the location of past solid waste landfilling within the Work Area.

The investigation work plan was approved by CDPHE (See Appendix D). Set forth below are the results of the investigation.

#### 1.3 Work Area Summary

#### 1.3.1 Work Area and Surrounding Properties

The Work Area consists of open land and one oil well drill staging pad. To the south of the Work Area is open land also owned by Stratus. The property to the South and ultimately the southern portion of the Work Area is intended to be developed as residential property. To the north, west and east of the Work Area are solid waste landfills. The Work Area contains rolling hills and the soils appear to have significant clay deposits. This shallow deposit of soil is on top of a siltstone/claystone/sandstone.

#### 1.3.2 Groundwater Conditions and Elevations

Groundwater at this site flows generally to the west at elevations shown in Section 3 of this report and Appendix A, Groundwater well elevations for the Work Area are provided in Section 3 as well. These groundwater elevations indicate the following:

- 1. The groundwater moves generally to the west, down the channels reflected in surface contours.
- 2. The water does not appear to go over any bedrock highs that are to the south of the Work Area. This is verified by the dry wells on the south side of the Work Area.
- 3. The investigation also identified two separate groundwater areas. There is a separate area to the east and west sides of the Work Area. These are confirmed by the dry wells between these areas.
- 4. On the eastern portion of the site, there are also two different groundwater regimes. There is an upper area which is mapped and discussed in detail in Section 3. The Quest wells also identify a deeper groundwater regime. This is shown in two wells that were able to actually recover from the groundwater pumping. This deeper regime was not the focus of this investigation.

The soils in the Work Area are classified as valley-fill/alluvium-terrace/slope wash and bedrock (Pierre shale and Fox Hills formations). The alluvium fill covers the entire site over the bedrock formations. The sandy lean clay soils are approximately 5 to 15 feet in thickness. The interbedded claystone/siltstone/sandstone was beneath the surface soils. Occasional zones of cemented sandstone/siltstone bedrock were encountered at the site. The claystone/siltstone/sandstone was generally weathered/soft to moderately hard at the interface with increasing hardness with depth. This information is presented in detail from the geotechnical report found in Appendix B.

#### 2.0 SITE INFORMATION

#### 2.1 Site Location and Description

The Work Area is part of a larger property owned by Stratus and its approximate location is west of Weld County Road (WCR) 5 and south of WCR 6. Figure 2.1 outlines the larger property.



**FIGURE 2.1: SITE LOCATION** 

The northern portion of the site is the Work Area for this project. The Work Area is identified in Figure 2.1 by the area in light blue. The Work Area consists of the following basic topographic areas:

- The previous landfilling area appears to be in the "valley fill" areas of the Work Area. This is in a general northeast southwest direction.
- Groundwater flow appears to be to the southwest based on the survey information and groundwater well information described herein. While the flow is towards the southwest, there are two areas identified for groundwater basins. The two ground water basins have dry areas between the basins and the groundwater within the two basins has significantly different conductivities all of which is discussed in Section 3 of this report.
- Surface water flows west down the valley of the Work Area. Before the landfilling activity at the site, the valley contained a shallow, fairly straight, streambed with a perennial stream. In the 1980's, small dams were added to enhance bird hunting activities at the site.

## 3.0 GROUNDWATER MONITORING WELL INSTALLATION, GROUNDWATER ELEVATIONS AND SOLID WASTE TRENCHING LOCATIONS

#### 3.1 Groundwater Well Locations

The final ground well locations are found in Figure 3-1. These well locations were approved as part of the work plan approved on November 10, 2016. Minor changes to these locations were determined during the investigation in the field due to site constraints. The most significant change was made in conjunction with Mr. Stovall of CDPHE while at the site. SEC MW-3 became a nested well (SEC MW-3A and 3B) due to the groundwater levels in the Quest wells and the lack of water observed in the first well for SEC MW-3A. SEC MW-3A did not show any groundwater in the December sampling event. In January, SEC MW-3A was still dry. SEC MW-3B was placed slightly to the north of SEC MW 3A and placed 10 feet deeper. As a result of this deeper placement, water was obtained in this well.

SEC MW-4 was originally drilled in the location as approved. However, the well was moved further to the west due to the lack of water and placed close to the surface water pond to confirm the groundwater surface elevations. However, SEC MW-4 remained dry at the time of the groundwater sampling events in November 2016 and water level measurements in December and January 2017.

The groundwater map provides spot groundwater surface elevations for each well. The QMW 3, QMW14 and QMW17 were not included in the groundwater surface mapping. This is due to the much lower piezometric elevations of this groundwater surface. It also appears that QMW14 and QMW17 are surface infiltration as the wells were developed and bailed dry but did not recover. This would be an indication of surface water infiltration. These wells do not have a complete seal at the surface and could be influenced by the surface water.

#### 3.2 Groundwater Well Installation

The groundwater monitoring well installation was completed by Drilling Engineers of Fort Collins with Earth Engineering, acting as the geotechnical engineer, providing the soil boring logs and oversight on the well installation. The well installation consisted of a PVC stem and utilized a PVC 0.01 inch slotted screen. The wells have a non-shrink grout near the surface and bentonite seal to prevent any surface water from entering the well. All drilling logs are included in Appendix B.

All of the monitoring wells were developed utilizing a NELAC certified HDPE bailer. This includes both the original Quest wells and the new SEC wells. Well development was documented in the field notes provided in Appendix A. The water was withdrawn from the well until a constant conductivity, ORP and pH were obtained. Consistent with the sampling and analysis plan, a minimum of at least 3 to 5 well volumes were withdrawn from the well. All water from the groundwater well development was placed into drums and will be disposed of property. This water remains on the site and has been tested and has been determined to be non-hazardous. Discussions have occurred with the City of Fort Collins wastewater department to dispose the waste water in the sanitary sewer system.

As the wells were installed, split spoon soil samples were obtained during the drilling operation. All waste soils were containerized for proper disposal. The sampling results of these soils are found in Appendix C. All of the soil samples have been found to be non-hazardous based on 40 CFR 216 characteristics. This soil will be disposed of at an approved solid waste disposal facility, most likely, Front Range Landfill in Erie Colorado.

Figure 3.2 provides a diagram of this well construction used in this investigation.

Figure 3-4 provides the extent of the organic contamination and the nitrate contamination at the site. These are the primary groundwater issues at the site.

#### 3.4 Test Pits for Solid Waste Extent

Test pits were placed at the site to determine the extent of solid waste disposal. These test pits were excavated by JB Sittner Excavation and were documented by Stewart. During this operation solid waste was identified, however no suspect materials were observed and no additional sampling was undertaken.

The location of the test pits is provided in Figure 3-3. Stewart Environmental utilized the previous aerial photos to start with locations and then in the field was able to determine the extent of the solid waste. Pursuant to the approved work plan, only the lateral extent of the waste was determined, not the depth.

#### 3.5 Surface Water Ponds

There are two surface water ponds that currently exist on the site. During the two times at the site, the surface water was frozen. When the ice is melted at the site, a surface water and a sediment will be obtained. We will also obtain information on turbidity, pH, ORP, dissolved oxygen and temperature. During the week of February 13, 2017, we will attempt to sample these bodies of water and sediment at that time. All results will be forwarded to CDPHE upon receipt of the same.

#### 3.6 Organic Contamination Investigation

Organic contamination was located in the area of SEC MW-2. Soil sampling results are provided in Appendix C. The locations of the test pits as approved in the December 29, 2016 addendum are shown in Figure 3-5. The depth of this material starts at approximately 4 to 5 feet below the surface and continues to just above bedrock at 9 to 10 feet. On average, the thickness near SEC MW-2 was 5 feet. Further out from the well, on a 60 foot radius from the well, the thickness decreases to one to two inches.

In order to calculate the volume of contaminated material, we used a radius of 90 feet and an average thickness of 2.5 feet. This results in a volume of approximately 2,000 cubic yards as a conservative estimate.

We also located two additional test pits, one to the north and one to the south of this area. These test pits were to provide information on any other organic contamination areas. These areas are identified on Figure 3-5. The other two areas that were investigated showed minor or no contamination of organics. It is believed, based on site conditions, that solvents were disposed of at the site in the following methods: (1) burial of the actual drums, (2) dumping of the solvents into a pit or (3) land application of the solvents. The area around SEC MW-2 was the location for the burial and placement of solvents in an excavated low area. The areas around SEC MW-3A and 3B and Q MW-9 are the likely locations of land application of solvents.

One buried drum was found at the site. This was approximately 60 feet east of SEC MW-2. The location is found on Figure 3-5. The material in the drum was sampled an analyzed for organic contamination. The drum was mainly MEK with toluene mixture. This is consistent with the CDPHE Preliminary Assessment of the material disposed of at the landfill. This material is characteristically hazardous per 40 CFR 261. These results are found in Appendix C.

#### 4.0 SAMPLING AND WATER QUALITY RESULTS

#### 4.1 Introduction

A summary of all of the testing results in found in Table 5-1. This table provides the information on the groundwater and soil testing results. It also provides the hazardous waste characterization testing results as well. All of the testing indicates that the soils and groundwater samples are non-hazardous per 40 CFR 261. However, the one drum that was discovered on the site was classified as characteristically hazardous.

All sampling and analysis performed at the site followed the criteria of the written plan contained in the approved work plan. All field sampling activities are documented in Appendix C. The quality assurance (QA) procedures contained in the approved work plan for field sampling and laboratory analysis were followed as part of this investigation.

#### 4.2 Groundwater Monitoring and Sampling

All existing Quest monitoring wells as well as the new SEC monitoring wells were sampled. All wells were developed by extracting 3 to 5 well volumes until a constant pH, conductivity and ORP were obtained. This information is summarized in Table 4-1. This table includes the well location, internal depths to water, standing water volumes, temperature, dissolved oxygen, conductivity, pH and ORP measurements.

Sampling started at the least contaminated well, SEC MW-6. The area around the well head was encircled with a disposable drop cloth to help keep sampling equipment clean and off the ground.

One "Groundwater Sampling Form" was completed for each well. The completed forms are found in Appendix A.

The field sampling personnel used disposable gloves throughout purging and sampling. A new pair of gloves was used at each well and was changed if anything other than decontaminated equipment was handled.

A decontaminated water level probe was used to measure the depth to water to the nearest 0.01 foot. Depth to water was measured from the north side of the top of casing. Top of casing and top of rim elevation difference was measured and compared to existing survey data to determine if settlement had occurred.

Redtail Ran	ch											
PM: DRS												
Samplier: DRS	-											
Well Location	Casing Dia	Internal Depth to Water	Total Well Depth	Detph Standing Water (Ft)	Gallons per foot	3 Well Vol (Gal)	Temp C	DO	Cond	рН	ORP	
SEC MW-1	0.167	12.25	17.42	5.17	0.16	0.84	13.6	3.2	3942	7.01	217.7	
							14		3700	7.14	212	
							13.3	3.67	3884	7.08	211	
SEC MW-3A - Dry				2730		740.000	0.010	70700			12/22	
SEC MW-3B	0.167	24	27.75	3.75	0.1632	0.612		11000000	11069	7.16		
	_						12.2		11307	7.04	226	
CECANNA Dec	+						12	4.22	11433	7.02	227	
SEC MW-4 - Dry	A	**		40.75		4.00	45.0		and a	7.00	20.5	
SEC MW-6	0.167	12.75	23	10.25	0.16	1.67	15.9 14.8		5512 5353	7.07 6.99	28.6	
							13.6		5353	7.02	-9.09	
SEC MW-5	0.167	15	18	3	0.16	0.49		_	7368	7.62	13.8	
SEC IVIVV-S	0.107	15	10		0.10	0.43	12.9		7363	7.62	12.1	
	1						12.7	4.19	7027	7.65	13	
SEC MW-2	0.167	8.8	18	9.2	0.16	1.50				8064	21	
DEC HIVE	0.107	0.0	- 10		0.10	1.50	12		8722	7.96	20.3	
							13.7	4.32	9108	7.46	13.9	
Q-NW-4 - Dry	1		95				2511		2200	77.10	2013	
Q-MW-5	0.167	15.7	29		0.16	2.17	14.2	3.54	10429	7.36	121.5	
5,	-			2010	-	2121	13.1	2.03	9728	7.34	114.4	
	1	7					13.4		9827	7.24	115	
QMW6 DRY	1											
QMW7 DRY	1											
QMW2 DRY	Ť				_		12.2	3.55	14319	6.84	121.6	
QMW3	0.167	41.2	50	8.8	0.16	1.45	12.4		14259	6.75	120.5	Bailed Dry
QMW6	0.167	8.7	21.9									***************************************
QMW8	0.167	9.3	27.4	18.1	0.16	2.95	13.3	4.59	9197	7.32	11.7	
							13.1	3.68	9128		9.2	
							13.4	2.63	9320	7.09	-10.2	
QMW9	0.167	8.7	21.9	13.2	0.16	2.15	13.4		7687	6.94	1751	
		ľ T					12.6	3.23	7727	7.06	25.3	
		k 5					13.7	2.23	10270	6.9	18.1	
QMW10 - Dry												
QMW11 - Dry												
QMW12 - Dry												
QMW13- Dry												
QMW14	0.167	68.2	71.2	3	0.16	0.49	10.8	5.04	8234	7.14	10.9	Bailed Dry
QMW15- Dry												
QMW16	0.167	17.2	31.8	14.6	0.16	2.38			9369	6.96	16.1	
							12.9		9456	7.03	10.4	
							12.5		9630		6.7	
QMW17	0.167	68.4	70.6	2.2	0.16	0.36	10.9	4.32	9128	7.28	11.3	Bailed Dry

Table 4-1 – Sampling Information

The field sampling personnel noted the depth to water on the "Groundwater Sampling Form", measured the total depth of the well, and calculated at least three well casing volumes. Disposable bailers were used, at least one per well. The disposal bailers were all NELAC certified and made of HDPE material.

Well purging consisted of bailing at least three well volumes until field parameters stabilized. This included pH, ORP, temperature and conductivity. Actual purge water amounts were calculated in the field based on depth to water measurements made at the time of the sampling event.

Purge water was collected and placed into 5 gallons sealed buckets on the surface. Testing of this purge water was completed to determine proper and approved disposal methods.

If a well was purged to dryness or was purged such that full recovery exceeds two hours, the well was sampled as soon as a sufficient volume of water had entered the well to enable the collection of samples. In the case of QMW14 and QMW17, the wells were bailed dry and did not recover; therefore, no sample could be obtained. This is normally a condition of surface water infiltration. On subsequent field sampling events, we will attempt to obtain additional samples. Field parameters were measured and recorded before sampling.

All wells at this site were sampled within a 4-day period.

Groundwater elevations were measured on the same day for an evaluation of the direction and flow of groundwater.

Each sample was labeled as it is collected. Each sample label included, at the minimum, the following information:

- □ Date of the sample collection
- ☐ Time of the sample collection
- Site and well location
- □ Sample identification (Monitoring Well number)
- □ Name of the person collecting the sample

Additional information that was included on the label includes:

- Analysis to be performed
- □ Preservative, if any, in the sample container
- ☐ Type of sample (i.e., groundwater, trip blank, etc.)

An indelible marker was used to write on sample labels.

#### 4.3 Sample Handling

Each cooler of samples had its own chain-of-custody form completely filled out. The chain-of-custody forms are included with the laboratory results.

The chain-of-custody form accompanied the samples from sampling through analysis and documented all parties who handled the samples. The original is kept on file at the analytical laboratory where samples are analyzed. Chain-of-custody forms are important documentation and are used as evidence of proper sample control if questions arise regarding sample results and quality control.

#### 4.4 Decontamination Procedure

Field equipment was decontaminated by washing in a detergent solution (Alconox and water), rinsing with tap water, and final rinsing with distilled water. Small equipment items were rinsed in buckets or by using a wash bottle; larger items were rinsed in buckets. Decontamination water was collected and tested to determine proper disposal methods.

Decontaminated probes and equipment were wrapped in aluminum foil to keep them clean or placed on the drop cloth for immediate use.

#### 4.5 Field Equipment Calibration Procedures

Field equipment requiring calibration were calibrated to known standards, in accordance with the equipment manufacturers' recommend schedules and procedures. Calibration of the water monitoring meters (conductivity, temperature, pH and dissolved oxygen) was performed at least daily. The Photo Ionization Detector (PID) was also calibrated on site as necessary per the manufacturer's recommendations. If equipment was not capable of being calibrated, then work stopped until it was replaced.

#### 4.6 Chemical Analysis

CDPHE Appendix B of the solid waste regulations provides for chemical analysis requirements. In the initial sampling of the groundwater monitoring wells and the surface water sites, all water samples were tested in accordance with Appendix 1A (6 CCR 1007-2 Part 1 – latest edition). In addition, the following specific compounds were tested:

)	Freon 113
J	Tetrahydrofuran (THF)
J	Propylene Glycol Dinitrate (propellant)
J	1,4-Dioxane

Chemical analysis was performed in accordance with the rules and regulations prescribed by CDPHE for groundwater analysis. This analysis was performed by a laboratory certified by the State of Colorado for drinking water analysis.

#### 4.7 Statistical Analysis

There is not enough data at this site at this time to perform any statistical analysis of the data.

#### 5.0 DATA RESULTS

The groundwater and soil results are presented in Table 5-1 and Appendix C. These results show the following:

1. The previous results were similar to this sampling round for the Quest wells. This was after the Quest wells were developed on the site.

	Sample Lo	cation and	Sample Dat	te												
Parameter		Q-M	W1			Q-N	/W2			Q-MI	N3			Q-N	1W4	145
	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-De
VOC's (Method 8260)						0. III - 2.	1	All Values a	re in ug/l	991-00			W.	0		
1-1, DCE									ND	ND	8.5	295				
Trans 1,2-DCE									ND	ND	ND	ND				
1,1-DCA									ND	ND	10	ND				
Cis-1,2-DCE								[	ND	ND	31	107				
Chloroform								[	ND	ND	3.6	ND				
2-Butanone (MEK)								[	ND	ND	ND	ND				
1,1,1-TCA	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	ND	ND	16	ND	Dry - No	Dry - No	Dry - No	Dry - No
Trichloroethlene ITCE)	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	8.3	480	3000	3590	Sample	Sample	Sample	Sample
Toluene									ND	ND	ND	ND			361	
Tetrachloroethylene (Perc)									ND	ND	ND	ND				
Tetrahydrofuran (TFA)									ND	ND	ND	ND				
Vinyl Chloride									ND	ND	ND	ND				
Xylenes - Total									ND	ND	ND	ND				
Remaining VOC's are ND									ND	ND	ND	ND				
SOC's (Method 8270)		_					1	All Values a	re in ug/l							
1,4 - Dioxane		-			1		· ·	Valuesa	c mag/			49				
Benzoic Acid	-									144	-2	ND				
Bencyl alcohol	Dry - No		Dry - No	Dry - No	n Dry - No	Dry - No	Dry - No	Dry - No				ND	Dry - No	Dry - No	Dry - No	Dry - No
Bis(2-ethylhexyl) phthalate	-			Sample	Sample	100	Sample	Sample	Sample	- 22	-		8		Sample	Sample
2-Methylphenol	Sample	Sumpic	Sample	Sumple	Sample	Sample	Jampie	Jumpic	-	_		ND	Jumpic	Jampie	Sumple	Sample
Remaining SOC's are ND											7.5	ND				
						-						1-00/00/100				
Total Organic Carbon	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry				28.6	Dry	Dry	Dry	Dry
Metals							Δ	II Values ar	e in mg/l							
Barium										(49	200	0.057				
Beryllium								1	166	24	44	0.0056				
Cadmium									1000	(**	200	0.007				
Calcium									144			521				
Copper										(88	2007	0.056				
Cobalt								1 1				0.068	Ĩ			
Lead		270 280	225 - 220	621 F20	020 1200	V2 8	2 27	e 597	S==		***	0.060	2 50	20 10	200 000	1200 1200
Magnesiium	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No				270	Dry - No	Dry - No	Dry - No	Dry - No
Nickel	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	O=-		e#3	0.162	Sample	Sample	Sample	Sample
Potassium									_			34.7				
Selenium										3.44	***	2.18				
Silver											2.2	ND				
Sodium									(44	344	**:	2,490				
Thallium	1								2.2			ND.				
Vanadium									177	2.44	***	0.048	0			
Incomple Company							r.									
Inorganic Compounds Carbonate									-		93	ND				
Bi-Carbonate	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No				897	Dry - No	Dry - No	Dry - No	Dry - No
Nitrite+Nitrate	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	577	- 50	982 981	181	Sample	Sample	Sample	Sample
Sulfate	Janipie	Jampie	Jampie	Jampie	Janipie	Janipie	Jampie	Jampie				5,870	Jampie	Janipie	Sample	Janipie
Jundle	Ļ.					1			255	2 <del>00</del>	750	3,870				

Table 5-1 – Environmental Testing

	Sample Loc	cation and	Sample Da	ite												
Parameter		Q-M					/W6			Q-N				Q-M	-	
700 500 500 500 500 500 500 500 500 500	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug				16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec
VOC's (Method 8260)								All Values	are in ug/	1				- 1		
1-1, DCE	ND	ND	ND	ND									NA	ND	25	ND
Trans 1,2-DCE	ND	ND	ND	ND									NA	ND	4.5	ND
1,1-DCA	ND	ND	ND	ND									NA	ND	30	ND
Cis-1,2-DCE	ND	ND	ND	ND									NA	350	800	835
Chloroform	ND	ND	ND	ND									NA	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	March 1 Sales on	AND TO SERVICE STATES	DISTRICT ASSESSED	emic 11 (00/2-0	ADDITION OF THE PARTY OF THE PA	Service industrial	ANTONIO MANTON	SUSSESS SOURCES	NA	ND	ND	ND
1,1,1-TCA	ND	ND	ND	ND	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	NA	ND	ND	ND
Trichloroethlene ITCE)	ND	ND	ND	ND	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	NA	560	1100	1230
Toluene	ND	ND	ND	ND									NA	ND	ND	140
Tetrachloroethylene (Perc)	ND	ND	ND	ND									NA	ND	ND	ND
Tetrahydrofuran (TFA)	ND	ND	ND	ND									NA	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND									NA	ND	ND	ND
Xylenes - Total	ND	ND	ND	ND									NA	ND	ND	ND
Remaining VOC's are ND	ND	ND	ND	ND									NA	ND	ND	ND
SOC's (Method 8270)								All Values	are in ug/	l .						
1,4 - Dioxane		-11		ND										-22	111	43
Benzoic Acid	. **	122	275	ND				2000 - 100A	200a - 1-4ca	S205 - 6004	Marine Marine	90 0040	. **	-77		ND
Bencyl alcohol	144	122	**	ND	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No				ND
Bis(2-ethylhexyl) phthalate	177			ND	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	- 0.77		175	ND
2-Methylphenol	1+4	199	775	ND									++	**		ND
Remaining SOC's are ND				ND												ND
	7							All Values	are in mg/	/1						
Total Organic Carbon	77		-	28.6	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	- 77	77	-27	18.4
Metals								All Values	are in mg/	'n						
Barium	244	385	***	0.029									***	244		0.051
Beryllium	144	146	144	ND									122	144		ND
Cadmium	- 277			ND												ND
Calcium	***		***	411									***			432
Cobalt	722	V20	120	0.005									22	22	122	0.015
Copper				ND									245	275	175	0.027
Lead	744	1,567	744	ND	D M	D	Dec. No.	D== N	D N	D= - N	Day Ma	D N	-		124	ND
Magnesiium	155	100	177	229	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No		177	177	314
Nickel				0.011	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample -		**	100	0.030
Potassium	- 22	722		24									22	-12	122	19
Selenium	199		1-1	0.58										- <del></del>	1777	ND
Silver		-		ND												ND
Sodium		1.77		1,780											122	1,320
Thallium	, de			ND									-			ND
Vanadium	122	==	122	ND									22	120	20	ND
Inorganic Compounds																
Carbonate	255	.77	77	ND								ĺ	77	-22		ND
Bi-Carbonate				692	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No			186	915
					100	1.7						7.0				
Nitrite+Nitrate	- 1	722	122	25.8	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample		- 22	22	0.775

Table 5-1 – Environmental Testing

	Sample Loc	cation and	Sample Da	te												
Parameter		Q-M	W9			Q-N	W10			Q-MV	V11			Q-M	W12	
	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-De
VOC's (Method 8260)								All Values	are in ug/l							
1-1, DCE	NA	ND	ND	ND					NA	ND	ND					
Trans 1,2-DCE	NA	ND	ND	ND					NA	ND	ND					
1,1-DCA	NA	ND	ND	ND					NA	ND	ND					
Cis-1,2-DCE	NA	150	3.8	208					NA	150	3.8					
Chloroform	NA	ND	ND	ND					NA	ND	ND					
2-Butanone (MEK)	NA	ND	ND	ND					NA	ND	ND					
1,1,1-TCA	NA	ND	ND	ND	Dry - No	Dry - No	Dry - No	Dry - No	NA	ND	ND	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No
Trichloroethlene ITCE)	NA	130	6.1	177	Sample	Sample	Sample	Sample	NA	130	6.1	Sample	Sample	Sample	Sample	Sample
Toluene	NA	ND	ND	147					NA	ND	ND					
Tetrachloroethylene (Perc)	NA	ND	ND	ND					NA	ND	ND					
Tetrahydrofuran (TFA)	NA	ND	ND	ND				j	NA	ND	ND					
Vinyl Chloride	NA	ND	ND	ND					NA	ND	ND					
Xylenes - Total	NA	ND	ND	ND				3	NA	ND	ND					
Remaining VOC's are ND	NA	ND	ND	ND					NA	ND	ND					
SOC's (Method 8270)								All Values	are in ug/l							
1,4 - Dioxane	753	775	55.5	ND				100.99	77	57.	515					
Benzoic Acid	220	445	445	ND					441	22	220					
Bencyl alcohol				ND	Dry - No	Dry - No	Dry - No	Dry - No				Dry - No	Dry - No	Dry - No	Dry - No	Dry - No
Bis(2-ethylhexyl) phthalate	753	***	:	ND	Sample	Sample	Sample	Sample	555	22.1	770	Sample	Sample	Sample	Sample	Sample
2-Methylphenol	440	220	220	ND					44	221	240					
Remaining SOC's are ND				ND				İ								
				111												
Total Organic Carbon				28.6	Dry	Dry	Dry	All Values Dry	are in mg/l		- 4	Dry	Dry	Dry	Dry	Dry
Andrew Commence of the Commenc				1000000	1000	177.5				12.72		1000	1000	175.75		
Metals								All Values	are in mg/I			-				
Barium		[		0.029				All Values			**					
Barium Beryllium	75.			ND				All Values		**	77. 24.					
Barium Beryllium Cadmium	##3 ##3	## P	## P	ND ND			3	All Values	  	575 225	545 245				2	
Barium Beryllium Cadmium Calcium	75.			ND ND 411				All Values		**	277	,				
Barium Beryllium Cadmium Calcium Cobalt	##3 ##3	## P	## P	ND ND 411 0.005			3	All Values	  	575 225	545 245	-				
Barium Beryllium Cadmium Calcium Cobalt Copper	## 1	-		ND ND 411 0.005 ND				All Values	  		57 22 47				7	
Barium Beryllium Cadmium Calcium Cobalt Copper Lead		 		ND ND 411 0.005 ND	Dry - No	Dry - No			77 75 24 77	22	77 22 27	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium	77. 22. 27.			ND ND 411 0.005 ND ND	Dry - No Sample	Dry - No Sample	Dry - No	Dry - No		67 67 67	77 74 77 78	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel				ND ND 411 0.005 ND ND 229 0.011	Dry - No Sample	Dry - No Sample				67 22 69 67 22	57 2 69  24	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No Sample
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium	# # # # # # # # # # # # # # # # # # #			ND ND 411 0.005 ND ND	The second second		Dry - No	Dry - No		27 22 64 67 22 44	57 		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel	# # # # # # # # # # # # # # # # # # #		# # # # # # # # # # # # # # # # # # #	ND ND 411 0.005 ND ND 229 0.011	The second second		Dry - No	Dry - No	            	65. 22. 66. 22. 23.	27 22 24 25 22 22 24		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium	# 15 mm 15 m	# # # # # # # # # # # # # # # # # # #		ND ND 411 0.005 ND ND 229 0.011	The second second		Dry - No	Dry - No		55. 22. 55. 55. 24. 25. 26. 27. 28.	27 22 23 24 24 24 24 24 24 24 24 24 24 24 24 24		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium	# 15 mm 15 m			ND ND 411 0.005 ND ND 229 0.011 24 0.58	The second second		Dry - No	Dry - No		22 22 23 24 24 25 25 26 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	57 24 56 57 24 24 24 24 25		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver	# 1			ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND	The second second		Dry - No	Dry - No		77 22 33 34 35 35 35 35 35 35 35 35 35 35 35 35 35	57. 24. 25. 27. 28. 29. 29. 20. 20. 20. 20. 20. 20. 20. 20		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium	75. 			ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND	The second second		Dry - No	Dry - No			57. 22. 23. 24. 25. 26. 27. 28. 29. 20. 20. 20. 20. 20. 20. 20. 20		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium	75. 27. 27. 27. 27. 27. 27. 27. 27			ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND 1,780	The second second		Dry - No	Dry - No		22	57 52 53 54 55 55 55 55 55 55 55 55 55 55 55 55		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds	75. 27. 27. 27. 27. 27. 27. 27. 27			ND ND 411 0.005 ND ND ND 229 0.011 24 0.58 ND 1,780 ND	The second second		Dry - No	Dry - No		22	57 52 53 54 55 55 55 55 55 55 55 55 55 55 55 55		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds Carbonate	## (Fig. 1)			ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND 1,780 ND	Sample	Sample	Dry - No Sample	Dry - No Sample		22 22 22 22 22 22 22 22 22 22 22 22 22	07- 24- 24- 24- 24- 24- 24- 24- 24- 24- 24	Sample	Sample	Sample	Sample	Sample
Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds	## (Fig. 1)			ND ND 411 0.005 ND ND ND 229 0.011 24 0.58 ND 1,780 ND	The second second		Dry - No	Dry - No		27 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	55		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -		The second second

Table 5-1 – Environmental Testing

	Sample Lo	cation and	Sample D	ate												
Parameter		Q-M	W13			Q-M\	V14			Q-M	W15			Q-MV	/16	
	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-De
VOC's (Method 8260)							5	All Values	are in ug/l							
1-1, DCE	NA	ND	27		NA	ND	ND		71-21				NA	ND	ND	NI
Trans 1,2-DCE	NA	ND	ND		NA	ND	ND						NA	ND	ND	N
1,1-DCA	NA	ND	ND		NA	ND	ND						NA	ND	ND	NI
Cis-1,2-DCE	NA	ND	ND		NA	150	3.8						NA	150	3.8	20
Chloroform	NA	ND	ND		NA	ND	ND						NA	ND	ND	N
2-Butanone (MEK)	NA	ND	ND		NA	ND	ND						NA	ND	ND	N
1,1,1-TCA	NA	ND	ND	Dry - No	NA	ND	ND	Dry - No	Dry - No	Dry - No	Dry - No	Dry - No	NA	ND	ND	N
Trichloroethlene ITCE)	NA	ND	ND	Sample	NA	130	6.1	Sample	Sample	Sample	Sample	Sample	NA	130	6.1	17
Toluene	NA	ND	ND		NA	ND	ND	87		Air.	17:		NA	ND	ND	14
Tetrachloroethylene (Perc)	NA	ND	ND		NA	ND	ND						NA	ND	ND	N
Tetrahydrofuran (TFA)	NA	ND	ND	1	NA	ND	ND						NA	ND	ND	N
Vinyl Chloride	NA	ND	ND	1	NA	ND	ND						NA	ND	ND	NI
Xylenes - Total	NA	ND	ND		NA	ND	ND					1	NA	ND	ND	N
Remaining VOC's are ND	NA	ND	ND		NA	ND	ND						NA	ND	ND	N
	13.70.0		- 114		7,75,5	- 10000							37.87.51		21,580	
SOC's (Method 8270)								All Values	are in ug/l							
1,4 - Dioxane					- 22			ND	a. c					142		NE
Benzoic Acid				1				ND							144	NI
Bencyl alcohol	Dry - No	Dry - No	Dry - No	Dry - No	-			ND	Dry - No	Dry - No	Dry - No	Dry - No			-	NE
Bis(2-ethylhexyl) phthalate	Sample				221				Sample	2.5	5.6	Sample	**		1.2	NE
2-Methylphenol	Jampie	Sample	Sample	Sample				ND	Jumpic	Sample	Sample	Sompic			-	NE
Remaining SOC's are ND					523	222	1575	ND						138	1.58	NE
Kellialillig 30C 3 are ND						-		IND					_	-	_	INL
								All Values	aro in ma/							
Total Organic Carbon	Dry	Dry	Dry	Dry		-		28.6		Dry	Dry	Dry	**			28.6
Total Organic Carbon	Diy	Diy	Diy	Diy				20.0	Diy	Diy	Diy	Diy			-	20.0
Metals														ĺ		
Barium							9	All Values	are in mg/	1						
					2			All Values	are in mg/	1						0.029
ACCOUNT OF THE PARTY OF THE PAR						22		0.029	are in mg/						322	0.029 NE
Beryllium								0.029 ND	are in mg/	1					1,75	NE
Beryllium Cadmium								0.029 ND ND	are in mg/				12 m		**	NE NE
Beryllium Cadmium Calcium								0.029 ND ND 411	are in mg/	ı			37 32 37		1,75	NI NI 41
Beryllium Cadmium Calcium Cobalt								0.029 ND ND 411 0.005	are in mg/							NE NE 41: 0.00:
Beryllium Cadmium Calcium Cobalt Copper								0.029 ND ND 411 0.005								NE 41: 0.00: NE
Beryllium Cadmium Calcium Cobalt Copper Lead	Dry - No	Dry - No	Dry - No	Dry - No				0.029 ND ND 411 0.005 ND	Dry - No	Dry - No	Dry - No	Dry - No	37 32 37			NE 41: 0.009 NE
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium	Dry - No Sample	Dry - No Sample	Dry - No Sample	Dry - No - Sample -			22 22 23 24 24 24	0.029 ND ND 411 0.005 ND ND			Dry - No Sample	Dry - No Sample				NE 41: 0.003 NE NE 229
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel		-	100	200			22 23 24 24 24 25 26 26 27 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	0.029 ND ND 411 0.005 ND ND 229 0.011	Dry - No	Dry - No	0.750	17.50				NE NE 0.009 NE NE 229 0.01:
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium		-	100	200				0.029 ND ND 411 0.005 ND ND 229 0.011	Dry - No	Dry - No	0.750	17.50				NE NE 0.005 NE NE 229 0.01:
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium		-	100	200				0.029 ND ND 411 0.005 ND ND 229 0.011 24 0.58	Dry - No	Dry - No	0.750	17.50				NE N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver		-	100	200				0.029 ND ND 411 0.005 ND ND 229 0.011 24 0.58	Dry - No	Dry - No	0.750	17.50				NE N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium		-	100	200			2	0.029 ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND 1,780	Dry - No	Dry - No	0.750	17.50				NI N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium		-	100	200			75	0.029 ND ND 411 0.005 ND ND 229 0.011 244 0.58 ND 1,780	Dry - No	Dry - No	0.750	17.50	77 77 78 78 78 78 78 78 78 78 78 78 78			NE N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium		-	100	200			2	0.029 ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND 1,780	Dry - No	Dry - No	0.750	17.50				Nii
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium		-	100	200			75	0.029 ND ND 411 0.005 ND ND 229 0.011 244 0.58 ND 1,780	Dry - No	Dry - No	0.750	17.50	77 77 78 78 78 78 78 78 78 78 78 78 78			NE N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium		-	100	200			75	0.029 ND ND 411 0.005 ND ND 229 0.011 244 0.58 ND 1,780	Dry - No	Dry - No	0.750	17.50	77 77 78 78 78 78 78 78 78 78 78 78 78			NE N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium		-	100	200		20 20 20 20 20 20 20 20 20 20 20 20 20 2		0.029 ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND 1,780 ND	Dry - No	Dry - No	0.750	17.50				NE N
Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds Carbonate	Sample	Sample	Sample	Sample		20 20 20 20 20 20 20 20 20 20 20 20 20 2		0.029 ND ND 411 0.005 ND ND 229 0.011 24 0.58 ND 1,780 ND	Dry - No Sample	Dry - No Sample	Sample	Sample				

Table 5-1 – Environmental Testing

		Q-M	A/17	ate		QTB	1	
Parameter	16-Mar	16-Apr	16-Aug	16-Dec	16-Mar	16-Apr	16-Aug	16-Dec
VOC's (Method 8260)	TO-IVIdI	10-Apr	10-Aug	All Values a		To-Ahi	10-Aug	10-060
1-1, DCE	NA	ND	ND	All values at	NA	37	6.6	
Trans 1,2 DCE	NA NA	ND	ND	1	NA	ND.	ND	
1,1-DCA	NΔ	ND	ND	-	NΑ	ND	28	
Cis-1,2-DCE	NA	ND	4.1	¥ *	NA	230	130	
Chloroform	NA NA	ND	ND	-	NA	ND ND	ND.	
2-Butanone (MEK)	NA NA	ND	ND		NA	ND	14	
1,1,1-TCA	NA	ND	ND	Not	NA	ND	ND.	Not
Trichloroethlene (TCE)	NA	ND	5.9	Sufficent	NA	610	220	Sufficent
Toluene	NA	ND	ND.	Sample -	NA	ND	ND	Sample
Tetrachloroethylene (Perc)	NA	ND	ND	-	NA	ND	ND	
Tetrahydrofuran (TFA)	NΛ	ND	ND	-	NΛ	ND	ND	
Vinyl Chloride	NA	ND	ND	-	NA	ND	ND	
The state of the s	NA NA	ND		-	NA	45/107		
Xylenes - Total	NA NA	ND	ND ND	-	NA NA	ND ND	ND ND	
Remaining VOC's are ND	INA	NU	NU		INA	ND	ND	
SOC's (Method 8270)				All Values a	ro in ua/l			
1,4 - Dioxane				All Values al	e iii ug/i			
Benzoic Acid	100	20	20	-	2		227	-
Bencyl alcohol				Not				Not
		20		Sufficent -			- 200	Sufficent
Bis(2-ethylhexyl) phthalate				Sample				Sample
2-Methylphenol Remaining SOC's are ND		375 A	- 45	-	77.	- 75	77	
Kellianing 300 s are ND	-			-		+	-	
				All Values ar	e in mg/l			
Total Organic Carbon			a.	All Values ar No Sample	e in mg/l			No Sample
2012	( <del></del>	4-	- Al-	No Sample		-14	<del>VII</del>	No Sampl
Metals								No Sampl
Metals Barium	-20	20	20	No Sample	e in mg/l		221	No Sampl
Metals Barium Beryllium	720	00 77	20	No Sample	e in mg/l			No Sampl
Metals Barium Beryllium Cadmium	-20	20	20	No Sample	e in mg/l		221	No Sampi
Metals Barium Beryllium Cadmium Calcium	722	20   77   24	22 27 22	No Sample			20 1 20 1 20 1	No Sampi
Metals Barium Beryllium Cadmium Calcium Cobalt	7.00	201   570   144	12 77 14 14	No Sample	e in mg/l 		22 77 24 22	No Sampl
Metals Barium Beryllium Cadmium Calcium Cobalt Copper		22 22 22 22 22 22 22 22 22 22 22 22 22	50 20 20 20 20 20 20 20 20 20 20 20 20 20	No Sample All Values ar	e in mg/l		25 C	
Metals Barium Beryllium Cadmium Calcium Cobalt Copper	722 727 722 722 723 724 725	20 20 20 20 20 20 20 20 20 20 20 20 20 2	22 22 22 24 24	No Sample  All Values ar	e in mg/l		20 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -	Not
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium		22 22 22 22 22 22 22 22 22 22 22 22 22	50 20 20 20 20 20 20 20 20 20 20 20 20 20	No Sample  All Values ar  Not Sufficent	e in mg/l		25 C	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel	722 742 742 742 743 744 745 746 747 747	22 27 24 22 27 27 27		No Sample  All Values ar	e in mg/l	22 70 22 24 24 25 44	22 77 66 22 77 24 77	Not
Metals Barium Beryflium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium	120	200   100	52 55 52 52 52 53 54 55 55 55 55	No Sample  All Values ar  Not Sufficent			22/ 77: 22: 32: 32: 57: 57:	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium	100	20 20 20 20 20 20 20 20 20 20 20 20 20 2	22 22 22 23 24 25 25 26 26 27 27 28	No Sample  All Values ar  Not Sufficent		22 25 24 24 24 25 27 27 27 27 27 27 27 27 27 27 27 27 27	22-1 - 75-1 - 22-1 - 22	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver	120 170 120 120 120 120 120 120 120 120 120 12	22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		No Sample  All Values ar  Not Sufficent			220 200 200 200 200 200 200 200 200 200	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium	1000 1000 1000 1000 1000 1000 1000 100	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		No Sample  All Values ar  Not Sufficent			220 220 220 220 220 220 220 220 220 220	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium	100 100 100 100 100 100 100 100 100 100	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		No Sample  All Values ar  Not Sufficent	e in mg/l		22 22 22 22 22 22 22 22 22 22 22 22 22	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium	1000 1000 1000 1000 1000 1000 1000 100	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		No Sample  All Values ar  Not Sufficent			220 220 220 220 220 220 220 220 220 220	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Solum Thallium Vanadium Inorganic Compounds	100 100 100 100 100 100 100 100 100 100	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		No Sample  All Values ar  Not Sufficent	e in mg/l		22 22 22 22 22 22 22 22 22 22 22 22 22	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds Carbonate	100 100 100 100 100 100 100 100 100 100	20 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		No Sample  All Values ar  Not Sufficent	e in mg/l	20	22 22 22 22 22 22 22 22 22 22 22 22 22	Not Sufficent
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds Carbonate Bi-Carbonate	123 177 174 174 175 177 177 177 177 177 177			No Sample  All Values ar  Not  Sufficent Sample	c in mg/l		20 20 20 20 20 20 20 20 20 20 20 20 20 2	Not Sufficent Sample
Metals Barium Beryllium Cadmium Calcium Cobalt Copper Lead Magnesiium Nickel Potassium Selenium Silver Sodium Thallium Vanadium Inorganic Compounds Carbonate	100 100 100 100 100 100 100 100 100 100	20 10 10 10 10 10 10 10 10 10 10 10 10 10	22 22 22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25	No Sample  All Values ar  Not  Sufficent  Sample	e in mg/l	20	22/ 22/ 22/ 22/ 22/ 23/ 24/ 24/ 24/ 24/ 24/ 24/ 24/ 24/ 24/ 24	Not Sufficent Sample

Table 5-1 – Environmental Testing

STEWART ENVIRONMENTAL CONSULTANTS, INC.

	ample Date						
Parameter	SEC MW-1	SEC MW-2	SEC MW-3A	SEC MW-3B	SEC MW-4	SEC MW-5	SEC MW-6
	16 Dec	16 Dec	16 Dec	16 Dec	16 Dec	16 Dec	16 Dec
VOC's (Method 8260)			All V	'alues are in	ug/l		
1-1, DCE	ND	ND		ND	No. of the last of	ND	ND
Trans 1,2-DCE	ND	ND		ND		0.003	ND
1,1-DCA	ND	ND		ND		ND	ND
Cis-1,2-DCE	ND	ND		ND		0.007	ND
Chloroform	ND	ND		ND		ND	ND
2-Butanone (MEK)	ND	526000		ND		ND	ND
1,1,1-TCA	ND	ND	Dry Well -	ND	Dry Well -	ND	ND
Trichloroethlene (TCE)	ND	ND	No Sample	ND	No Sample	0.010	ND
Toluene	ND	68,000		1,190		ND	ND
Tetrachloroethylene (Perc)	ND	ND		ND		0.007	ND
Tetrahydrofuran (TFA)	ND	ND		ND		ND	ND
Vinyl Chloride	ND	ND		ND		0.006	ND
Xylenes - Total	ND	ND		ND		ND	ND
Remaining VOC's are ND	ND	ND		ND		ND	ND
					945		
SOC's (Method 8270)			All V	alues are in	ug/l	· · · · · · · · · · · · · · · · · · ·	
1,4 - Dioxane	ND	ND	R B	ND		ND	ND
Benzoic Acid	ND	70	1275 OKA BOOK 1	ND	11. AANO 280.	ND	ND
Bencyl alcohol	ND	15	Dry Well -	ND	Dry Well -	ND	ND
Bis(2-ethylhexyl) phthalate	ND	ND	No Sample		No Sample	ND	ND
2-Methylphenol	ND	133		9		ND	ND
Remaining SOC's are ND	ND	ND		ND		ND	ND
				alues are in			
Total Organic Carbon	10.5	568	No Sample	42.6	No Sample	19.4	39.4
Metals			All V	alues are in	mø/l		
Barium	0.172	0.092		0.066		0.092	0.062
Beryllium	ND	ND	2	ND		ND	0.0053
Cadmium	0.008	ND		ND		ND	0.014
Calcium	223	231		387		276	427
Chromium	ND	0.005	Ť i	ND		ND	0.018
Cobalt	ND	0.011	š (4	0.005		0.004	0.03
Copper	0.025	0.021		0.008		0.038	0.109
Lead	0.059	ND	Dry Well -	ND	Dry Well -	ND	0.104
Magnesiium	110	256	Color Statement Color	244	No Sample	134	148
Nickel	0.011	0.024		0.03	72	0.018	0.069
Potassium	9,66	10.5	i i	21.6		14.7	21,9
Selenium	ND	ND	8	0.502		ND	ND
	ND	ND	8	ND		ND	ND
Silver		3.033		2120	i	1510	612
Silver Sodium	538	1600				ND	ND
Sodium	538 ND	1600 ND		ND			
E301.77	538 ND ND	ND ND		ND ND	g	ND	ND
Sodium Thallium	ND	ND	All V		mg/l	33350	ND
Sodium Thallium Vanadium	ND	ND	All V	ND	mg/I	33350	ND ND
Sodium Thallium Vanadium Inorganic Compounds	ND ND	ND ND	All V	ND alues are in	100000000000000000000000000000000000000	ND	
Sodium Thallium Vanadium Inorganic Compounds Carbonate	ND ND	ND ND		ND alues are in ND 4/2	IS COMPANIED ON PRINT	ND ND	ND

Table 5-1 – Environmental Testing

	Test Pit Sampl	es and TCLP Re	esults							
Parameter	Test Pit 1 - 5	Test PIt 2 - 5	Test Pit 3	Test Pit 4	Test Pit 5 - Solvent Drum Sample	Test Pit 5 - Solvent Drum Sample - TCLP Result	Test Pit 4	Test Pit 4	Test Pit 8 - 5	Test PIt 9 - 5
	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan	17-Jan
VOC's [Method 8260]				79	All Values are	in mg/kg (ppm	)			
1-1, DCE	ND	ND			ND				ND	ND
Isopropylbenezene	ND	ND			ND				0.316	ND
Isoproplytoluene, 4-	ND	ND			ND				0.346	ND
Trimethylbenzene, 1,2,4	ND	ND			ND				0.223	ND
Trimethylbenzene, 1,3,5-	ND	ND		_	ND				0.187	ND
2-Butanone (MEK)	30,5	41.7	No sample -	No sample -	530000	26500	No sample -	No sample -	41.2	28.7
butylbenzene, n-	ND	ND	no	no	ND		no	no	0.277	ND
Trichloroethlene (TCE)	0.217	ND	indiciation of	indiciation of	ND		indiciation of	indiciation of	ND	ND
Toluene	0.185	18.6	organics	organics	2,700	135	organics	organics	0.280	0.200
Tetrachloroethylene (Perc)	ND	ND	4070	5.50.	ND		2		ND	ND
Tetrahydrofuran (TFA)	ND	ND			ND				ND	ND
Vinyl Chloride	ND	ND		1	ND				ND	ND
Xylenes - Total	ND	ND			ND	e e			ND	ND
Remaining VOC's are ND	ND	ND			ND				ND	ND
SDC's (Method 8270)		1111			All Values are	in mg/kg (ppm				
1,4 - Dioxane	NA	NA			ND	ND			NA	NA
Benzoic Acid	NA	NA	No Sample -	No Sample -	ND	ND	No Sample -	No Sample -	NA	NA
Bencyl alcohol	NA	NA	no	no	ND	ND	no	no	NΔ	NA
Bis(2-ethylhexyl) phthalate	NA	NA	indiciation of	indiciation of	ND	ND	indiciation of	indiciation of	NA	NA
2-Methylphenol	NA	NA	organics	organics	ND	NU	organics	organics	NA	NA
Remaining SOC's are ND	NA	NA			ND	ND			NA	NA

Table 5-1 – Environmental Testing

- 2. The new SEC wells provided information the following information:
  - a. There are two distinct areas of groundwater contamination. The east side of the site and the west side of the site. These are identified in Figure 3-1.
  - b. The east side of the site has completely different water quality issues. The salt content is much higher in the east wells. The organic content is also higher and exceeds groundwater standards for the following compounds:
    - i. Toluene (high concentrations in soil and groundwater near SEC MW-2)
    - ii. MEK (high concentrations in soil and groundwater near SEC MW-2)
    - iii. 1,4 Dioxane
    - iv. Minor contamination of chlorinated solvents
    - v. High nitrate values near SEC MW-3B
  - c. The west side of the site has the following compounds:
    - i. Minor solvent contamination (which is different from the east side of the site) of the site near SEC MW-5
    - ii. Nitrate values near SEC MW-6
    - iii. The water quality for the west side is a much lower conductivity, indicating potentially two different water sources
  - d. The soil contamination is associated with the area on the east side where a solvent drum was found and smaller amounts of contamination to the north and south of this site. The main contamination is MEK followed by Toluene. There are then smaller amounts of chlorinated solvents and some benzene compounds.
- 3. The west and east areas are separated by a dry area indicating that the east side is in a "bowl" and likely has some "overflow" of the groundwater during high groundwater table levels. Otherwise, this area does not appear to move down gradient.
- 4. The soil samples contain high levels of solvents of toluene and MEK. However, these levels are below the TCLP characteristic test and therefore would be classified as a solid waste.
- 5. The solvent drum found at the site contains over fifty percent MEK which classifies this material as a characteristically hazardous waste. This material will need to be removed from the site and disposed of at a certified TSDF facility.

#### 6.0 CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 Conclusions

Stewart Environmental has completed the work plan at the site as approved in the original work plan (as amended). Our conclusions based on this investigation are:

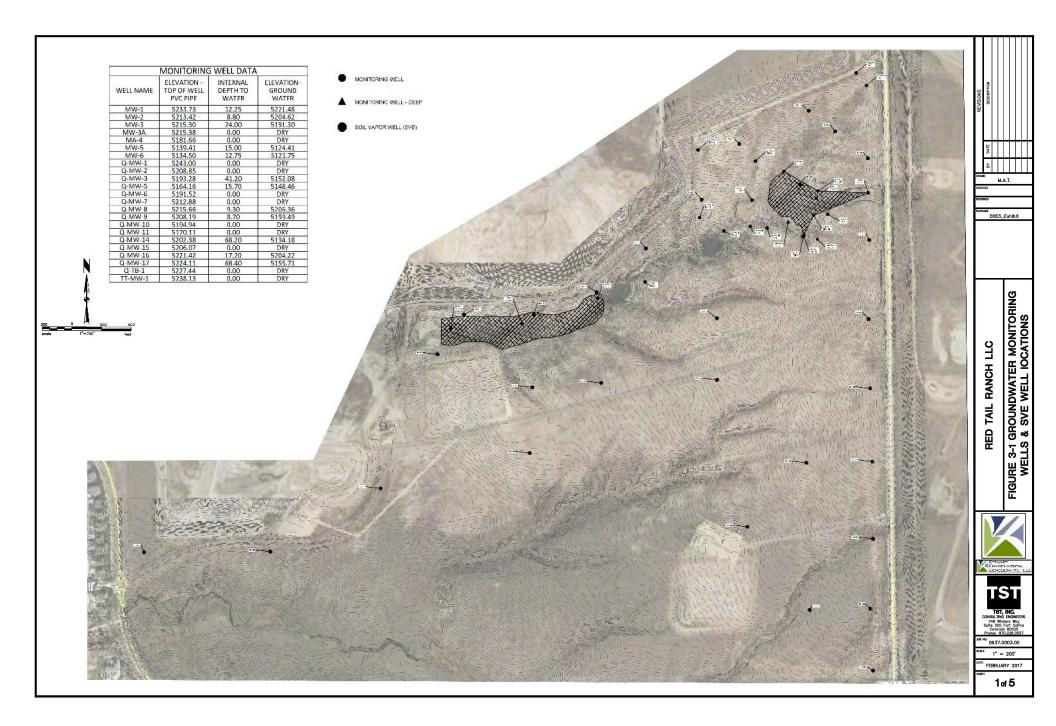
- 1. The site contains two different areas of contamination. The upper site (the east side of the Work Area) contains high organic solvent of toluene and MEK near SEC MW-2. These were confirmed in the subsequent soil sampling and test pits.
- 2. Approximately 2,000 yards of organic contaminated soils at the site are a solid waste containing high levels of solvents. This material is near SEC MW-2.
- 3. The drum containing liquid solvent found at the site is a characteristic hazardous waste. This material will need to be removed and disposed of at a certified facility.

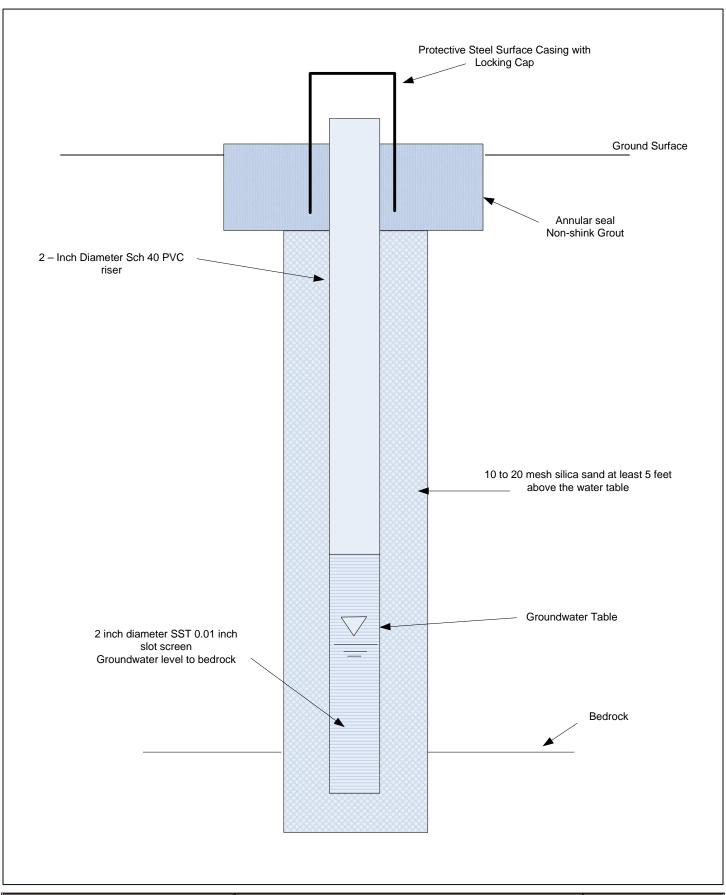
#### 6.2 Recommendations

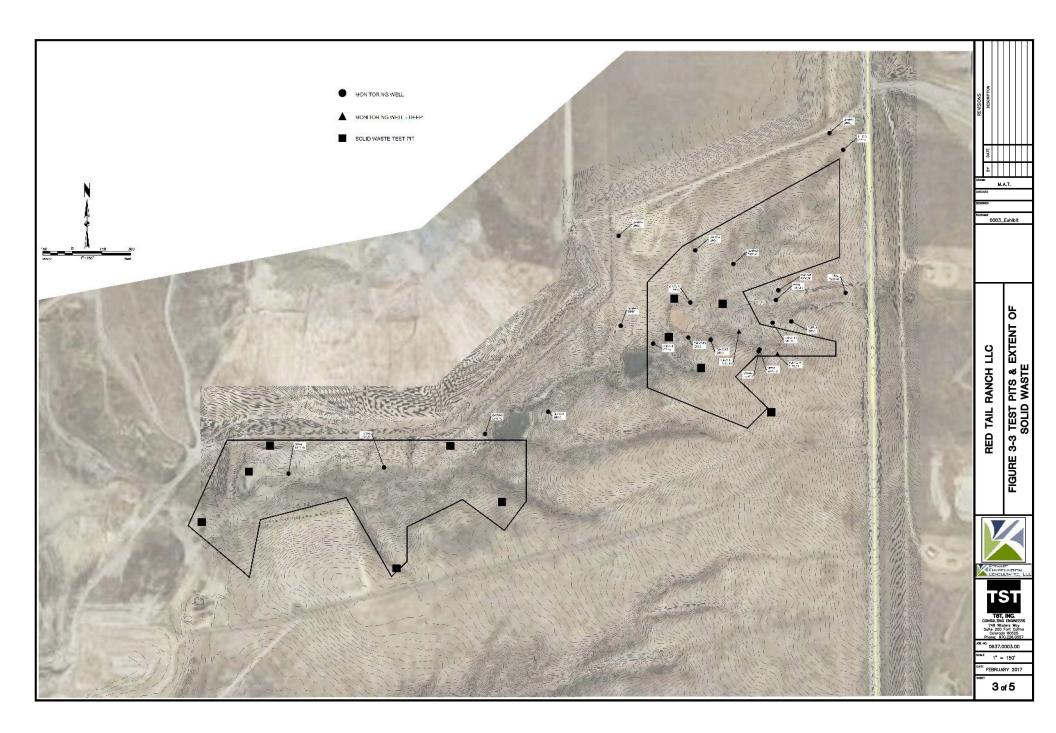
The recommendations as a result of the completion of this work plan are:

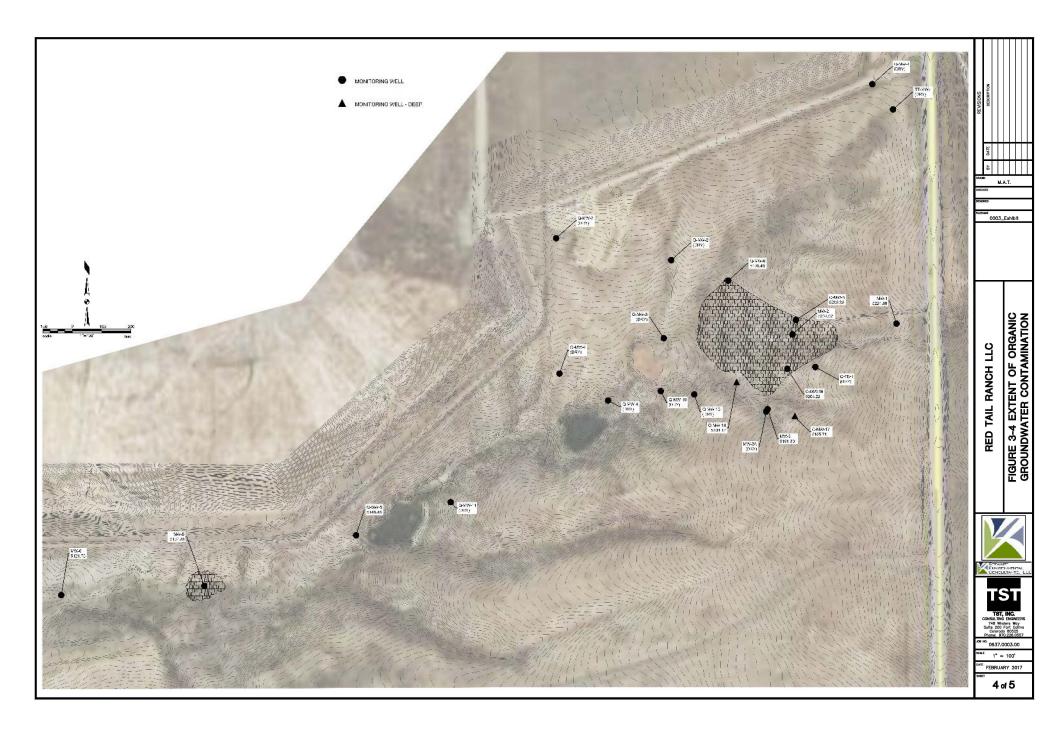
- 1. Obtain concurrence of CDPHE that the nature and extent of contamination at the Stratus property in general, and the Work Area, specifically, has been adequately determined. If not, identify any further investigation requirements.
- 2. Develop a site remediation plan and obtain approval of same from CDPHE.
- 3. Discuss with CDPHE any further requirements for the Work Area.

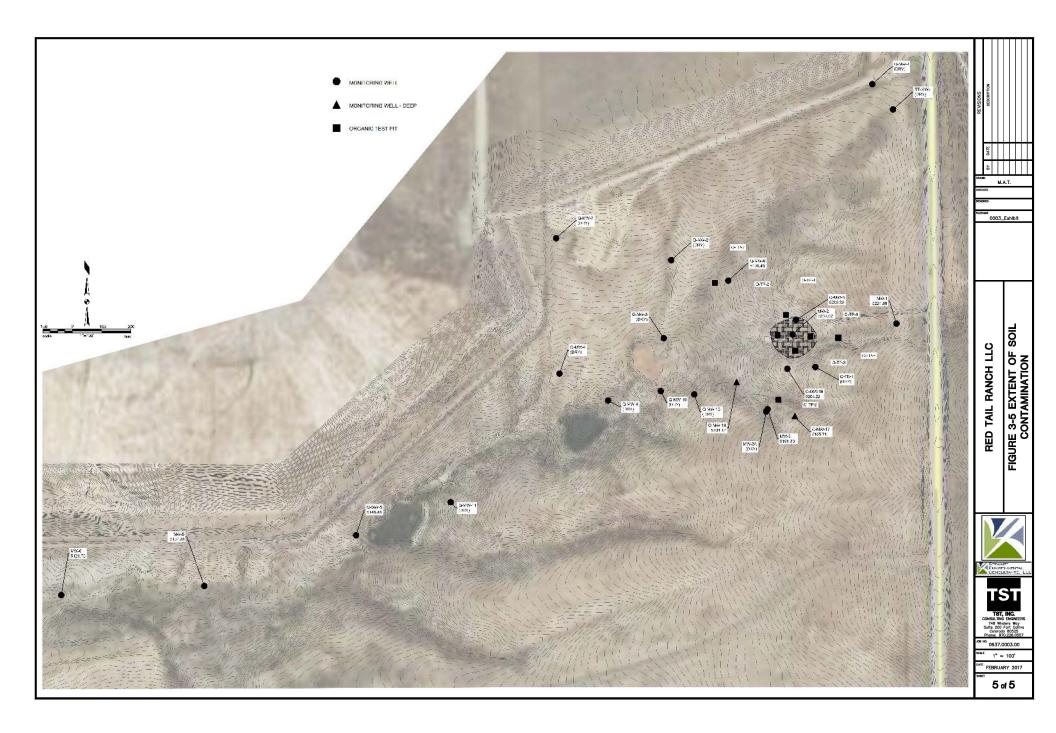
## **Figures**











## Appendix A

**Groundwater Sampling Procedures and Field Notes** 

	JOB NO:		
CLIENT: Eric (and Fill	PROJECT NAME:		
PROJECT MGR: Dave Stews	sampler: Jam	res Stewa	rf
-			
	MONITORING WELL DATA		
WELL NO./LOCATION:	W=2	LOCK #:_	
DATE CONSTRUCTED:	INSTALLED DEPTH (0.00	)FT):	
SCREENED INTERVAL:	TO ELEVATIO	ON T.O.C.(0.00F	T)
CASING DIA.(INCH):	TOC FROM GROUND SURF	FACE (0.00FT):_	
	OBSERVED WELL DATA		
INITIAL DEPTH TO WATER FROM	T.O.C. (0.00FT):		
TOTAL WELL DEPTH FROM T.O.C.	(0.00FT)		
DEPTH OF STANDING WATER:	(FT) X GALLON	IS/FOOT:	4
2" -0.1632 4"6528 10"-4.0 3" -0.3672 6"-1.468 12"-5.8	0800 THREE WELL V 8752 BEFORE SAMPL	OLUMES	(GAL)
FREE PRODUCT: YES/NO DEPTH &	DESCRIPTION:		
		SAMPI	LE: YES / NO
1.BEFORE BAILING: PH	ELEC. COND.	SAMPI TEMP	LE: YES / NO
1.BEFORE BAILING: pH VOLUME TO MIDPOINT(GAL):	ELEC. COND.	TEMP	
	ELEC. COND.	TEMP	
VOLUME TO MIDPOINT(GAL):	ELEC. COND.  BAILED (	TEMP ACTUAL GAL):	С
VOLUME TO MIDPOINT(GAL):  2.MID-POINT: PH  TOTAL BAILED / PUMPED (ACTUAL)	ELEC. COND.  BAILED (  ELEC. COND.	TEMP  ACTUAL GAL):  TEMP  PUMP RATE:	c c GAL/MIN
VOLUME TO MIDPOINT(GAL):  2.MID-POINT: PH	ELEC. COND.  BAILED (	TEMP  ACTUAL GAL):	С
VOLUME TO MIDPOINT (GAL):  2.MID-POINT: PH  TOTAL BAILED / PUMPED (ACTUAL)	ELEC. COND.  BAILED (  ELEC. COND.  GAL):  ELEC COND.	TEMP  ACTUAL GAL):  TEMP  PUMP RATE:	c c GAL/MIN
VOLUME TO MIDPOINT (GAL):  2.MID-POINT: PH  TOTAL BAILED / PUMPED (ACTUAL  3.BEFORE SAMPLING: PH	ELEC. COND.  BAILED (  ELEC. COND.  GAL):  ELEC COND.	TEMP  ACTUAL GAL):  TEMP  PUMP RATE:  TEMP	c c GAL/MIN
VOLUME TO MIDPOINT (GAL):  2.MID-POINT: PH  TOTAL BAILED / PUMPED (ACTUAL  3.BEFORE SAMPLING: PH  TURBIDITY (DESCRIPTION AT SAM WELL BAILED DRY: YES / NO TO  PARAMETERS: VOC BTEX TPH META	ELEC. COND.  BAILED (  ELEC. COND.  GAL):  ELEC COND.  MPLING)  OTAL BAILED (ACTUAL GALS BNA TCLP OTHER:	TEMP  ACTUAL GAL):  TEMP  PUMP RATE:  TEMP	c c GAL/MIN
VOLUME TO MIDPOINT (GAL):  2.MID-POINT: PH  TOTAL BAILED / PUMPED (ACTUAL  3.BEFORE SAMPLING: PH  TURBIDITY (DESCRIPTION AT SAM WELL BAILED DRY: YES / NO TO PARAMETERS: VOC BTEX TPH META	ELEC. COND.  BAILED (  ELEC. COND.  GAL):  ELEC COND.  MPLING)  OTAL BAILED (ACTUAL GALS BNA TCLP OTHER:	TEMP  ACTUAL GAL):  TEMP  PUMP RATE:  TEMP	c c GAL/MIN
VOLUME TO MIDPOINT (GAL):  2.MID-POINT:  PH  TOTAL BAILED / PUMPED (ACTUAL  3.BEFORE SAMPLING: PH  TURBIDITY (DESCRIPTION AT SAM WELL BAILED DRY: YES / NO TO  PARAMETERS: VOC BTEX TPH META	ELEC. COND.  BAILED (  ELEC. COND.  GAL):  ELEC COND.  MPLING)  OTAL BAILED (ACTUAL GALS BNA TCLP OTHER:	TEMP  ACTUAL GAL):  TEMP  PUMP RATE:  TEMP	c GAL/MIN

DATE: 12.15.16	JOB NO:		
CLIENT: Ese (and C:1	PROJECT NAME:_		
PROJECT MGR: Dave St	ewall sampler:	ames Steva	irt
y			
	MONITORING WELL D	ATA	
WELL NO./LOCATION: Q-	M.O-23	LOCK #:_	
DATE CONSTRUCTED:	INSTALLED DEPTH (	0.00FT):	
SCREENED INTERVAL:	TO ELEV	ATION T.O.C. (0.00F	'T')
CASING DIA.(INCH):	TOC FROM GROUND	SURFACE (0.00FT):_	
	OBSERVED WELL DA	ΓA	
INITIAL DEPTH TO WATER FR	OM T.O.C. (0.00FT):	41'. 2''	
TOTAL WELL DEPTH FROM T.O			
DEPTH OF STANDING WATER:_	8.9 (FT) <b>X</b> GA	LLONS/FOOT:	B 0.163
2" -0.1632 4"6528 10" 3" -0.3672 6"-1.468 12"	-4.0800 THREE WE -5.8752 BEFORE S	LL VOLUMES . 1.45	5 (GAL)
FREE PRODUCT: YES/NO DEPT	H & DESCRIPTION:		
		SAMP:	LE: YES / NO
1.BEFORE BAILING: pH	ELEC. COND.	TEMP	С
VOLUME TO MIDPOINT (GAL):	BAIL	ED (ACTUAL GAL):	
2.MID-POINT: pH	ELEC. COND.	TEMP	С
TOTAL BAILED / PUMPED (AC	TUAL GAL):	PUMP RATE:	GAL/MIN
3.BEFORE SAMPLING: pH	ELEC COMP	mmer.	
TURBIDITY (DESCRIPTION AT	ELEC COND.	TEMP	С
WELL BAILED DRY: YES / NO		I CAIN	
PARAMETERS: VOC BTEX TPH 1		25	
	METALS BNA ICLE OTHER		
COMMENTS:			
SAMPLERS SIGNATURE:		DATE: 12·1	5.16

SEC Form F-01 Groundwater Sampling Form 12-04

DATE: 12.16-16	JOB NO:		
CLIENT: Estes Part Erie lang	C\\ PROJECT NAME:		
PROJECT MGR: Vave Stavert			
1			
	TORING WELL DATA		
WELL NO./LOCATION: Q.M.W.	4	LOCK #:_	
DATE CONSTRUCTED: INST	TALLED DEPTH (0.00FT	):	
SCREENED INTERVAL: TO _	' ELEVATION	r.o.c.(0.00F	Γ)
CASING DIA.(INCH):TOO	FROM GROUND SURFACE	E (0.00FT):_	
OBS	ERVED WELL DATA		
INITIAL DEPTH TO WATER FROM T.O.	C. (0.00FT):		
TOTAL WELL DEPTH FROM T.O.C. (0.0			
DEPTH OF STANDING WATER:	(FT) X GALLONS/	FOOT:	1
2" -0.1632 4"6528 10"-4.0800 3" -0.3672 6"-1.468 12"-5.8752			(GAL)
FREE PRODUCT: YES/NO DEPTH & DESC	CRIPTION:		
		SAMPI	E: YES / NO
1.BEFORE BAILING: pH	ELEC. COND.	TEMP	С
VOLUME TO MIDPOINT(GAL):	BAILED (ACT	rual GAL):	
2.MID-POINT: pH	ELEC. COND.	TEMP	С
TOTAL BAILED / PUMPED (ACTUAL GAI	L): PUN	MP RATE:	GAL/MIN
3.BEFORE SAMPLING: PH	ELEC COND.	TEMP	С
TURBIDITY (DESCRIPTION AT SAMPLIN			
WELL BAILED DRY: YES / NO TOTAL	BAILED (ACTUAL GAL)		
PARAMETERS: VOC BTEX TPH METALS E	BNA TCLP OTHER:		
COMMENTS: Dry Dell			
SAMPLERS SIGNATURE:		DATE: 12-1	15-16
SEC Form F-01 Groundwater Sampling Form 12-04	V		

DATE: 12.15.16	JOB NO:				
CLIENT: ECIE Landfill F	PROJECT NAME:				
PROJECT MGR: DAVE Stewart	SAMPLER:	lames (	Stewa	rł	
	TORING WELL				
WELL NO./LOCATION & MW.5			LOCK	#:	
DATE CONSTRUCTED: INST					
SCREENED INTERVAL: TO _	ELE	VATION T.C	.c.(0.	OOFT)	446-04 - AUG-12
CASING DIA.(INCH): TOC	FROM GROUND	SURFACE (	0.00FT	):	
OBS	ERVED WELL D	ATA			
INITIAL DEPTH TO WATER FROM T.O.C	C. (0.00FT):	15.7'	1		
TOTAL WELL DEPTH FROM T.O.C. (0.0	OFT) 2	9			
DEPTH OF STANDING WATER: 13.3			T: 7	<del>13</del> 0.1	1-37
2" -0.1632 4"6528 10"-4.0800 3" -0.3672 6"-1.468 12"-5.8752	THREE W	ELL VOLUME	S		
FREE PRODUCT: YES/NO DEPTH & DESC					
THEE PRODUCT: IES/NO DEPTH & DESC	CRIPTION:				
FREE PRODUCT: IES/NO DEPTH & DESC	CRIPTION:		S <i>I</i>	AMPLE: YE	s / NO
		2077			
1.BEFORE BAILING: pH 7.3( VOLUME TO MIDPOINT (GAL):	ELEC. COND.		TEMP	13.8	
1.BEFORE BAILING: pH 7.36  VOLUME TO MIDPOINT (GAL):	ELEC. COND.	LED (ACTUA	TEMP	13.8	С
1.BEFORE BAILING: PH 7.3( VOLUME TO MIDPOINT(GAL):  2.MID-POINT: PH	ELEC. COND.  BAI  ELEC. COND.	LED (ACTUA	TEMP  L GAL):	13.8	С
1.BEFORE BAILING: pH 7.36  VOLUME TO MIDPOINT (GAL):	ELEC. COND.  BAI  ELEC. COND.	LED (ACTUA	TEMP  L GAL):	13.8	С
1.BEFORE BAILING: PH 7.3( VOLUME TO MIDPOINT(GAL):  2.MID-POINT: PH	ELEC. COND.  BAI  ELEC. COND.	LED (ACTUA	TEMP  L GAL):	13.8	С
1.BEFORE BAILING: PH 7.3(  VOLUME TO MIDPOINT(GAL):  2.MID-POINT: PH  TOTAL BAILED / PUMPED (ACTUAL GAL)	ELEC. COND.  BAI  ELEC. COND.	LED (ACTUA	TEMP  L GAL):  TEMP  RATE:	13.8	c c
1.BEFORE BAILING: pH 7.3(  VOLUME TO MIDPOINT(GAL):  2.MID-POINT: pH  TOTAL BAILED / PUMPED (ACTUAL GAL  3.BEFORE SAMPLING: pH	ELEC. COND.  BAI  ELEC. COND.  C):  ELEC COND.	LED (ACTUA	TEMP  L GAL):  TEMP  RATE:	13.8	c c
1.BEFORE BAILING: pH 7.3(  VOLUME TO MIDPOINT(GAL):  2.MID-POINT: pH  TOTAL BAILED / PUMPED (ACTUAL GAL  3.BEFORE SAMPLING: pH  TURBIDITY (DESCRIPTION AT SAMPLIN	ELEC. COND.  BAI  ELEC. COND.  C):  ELEC COND.  G)  BAILED (ACTU	LED (ACTUA PUMP AL GAL)	TEMP  L GAL):  TEMP  RATE:	13.8	c c
1.BEFORE BAILING: pH 7.3(  VOLUME TO MIDPOINT(GAL):  2.MID-POINT: pH  TOTAL BAILED / PUMPED (ACTUAL GAL  3.BEFORE SAMPLING: pH  TURBIDITY (DESCRIPTION AT SAMPLIN WELL BAILED DRY: YES / NO TOTAL	ELEC. COND.  BAI  ELEC. COND.  C):  ELEC COND.  G)  BAILED (ACTU	LED (ACTUA PUMP AL GAL)	TEMP  L GAL):  TEMP  RATE:	13.8	c c
1.BEFORE BAILING: pH 7.3(  VOLUME TO MIDPOINT(GAL):  2.MID-POINT: pH  TOTAL BAILED / PUMPED (ACTUAL GAL  3.BEFORE SAMPLING: pH  TURBIDITY (DESCRIPTION AT SAMPLIN WELL BAILED DRY: YES / NO TOTAL  PARAMETERS: VOC BTEX TPH METALS B	ELEC. COND.  BAI  ELEC. COND.  C):  ELEC COND.  G)  BAILED (ACTU	LED (ACTUA PUMP AL GAL) ER:	TEMP  L GAL):  TEMP  RATE:  TEMP	13.8	c c

SEC Form F-01 Groundwater Sampling Form 12-04

DATE: 12-15-16	JOB NO:		
CLIENT: Erie landfill	PROJECT NAME:		
PROJECT MGR: Dave Stewar	L SAMPLER: James	es Stewart	
	ONITORING WELL DATA		
WELL NO./LOCATION: Q.M.W	7	LOCK #:_	
DATE CONSTRUCTED: IN	NSTALLED DEPTH (0.0	OFT):	
SCREENED INTERVAL: TO	ELEVATI	ON T.O.C.(0.00F	T)
CASING DIA.(INCH):	FOC FROM GROUND SUR	FACE (0.00FT):_	
	DBSERVED WELL DATA		
INITIAL DEPTH TO WATER FROM T.	O.C. (0.00FT):		
TOTAL WELL DEPTH FROM T.O.C. (	0.00FT)		
DEPTH OF STANDING WATER:			
2" -0.1632 4"6528 10"-4.08 3" -0.3672 6"-1.468 12"-5.87	00 THREE WELL 52 BEFORE SAMP	VOLUMES	(GAL)
FREE PRODUCT: YES/NO DEPTH & D		SAMPI	LE: YES / NO
1.BEFORE BAILING: pH	ELEC. COND.	TEMP	С
VOLUME TO MIDPOINT(GAL):	BAILED	(ACTUAL GAL):	
2.MID-POINT: pH	ELEC. COND.	TEMP	
			С
TOTAL BAILED / PUMPED (ACTUAL (		PUMP RATE:	
TOTAL BAILED / PUMPED (ACTUAL O			
	GAL):ELEC COND.	PUMP RATE:	GAL/MIN
3.BEFORE SAMPLING: PH	ELEC COND.	PUMP RATE:	GAL/MIN
3.BEFORE SAMPLING: PH TURBIDITY (DESCRIPTION AT SAMP)	ELEC COND. LING) AL BAILED (ACTUAL GA	PUMP RATE:	GAL/MIN
3.BEFORE SAMPLING: PH TURBIDITY (DESCRIPTION AT SAMP) WELL BAILED DRY: YES / NO TOTAL	ELEC COND.  LING)  AL BAILED (ACTUAL GAUGE BNA TCLP OTHER:	PUMP RATE:	GAL/MIN
3.BEFORE SAMPLING: PH  TURBIDITY (DESCRIPTION AT SAMP)  WELL BAILED DRY: YES / NO TOTA  PARAMETERS: VOC BTEX TPH METALS	ELEC COND.  LING)  AL BAILED (ACTUAL GAUGE BNA TCLP OTHER:	PUMP RATE:	GAL/MIN

DATE: 12.15.16 JOB NO:
DECEMBER OF A COLUMN AND A COLU
PROJECT MGR: Dave Stewart SAMPLER: LAMES Stewart
MONITORING WELL DATA
WELL NO./LOCATION: Q-MW.7 LOCK #:
DATE CONSTRUCTED: INSTALLED DEPTH (0.00FT):
SCREENED INTERVAL: _ ' TO _ ' ELEVATION T.O.C.(0.00FT)
CASING DIA.(INCH): TOC FROM GROUND SURFACE (0.00FT):
OBSERVED WELL DATA
INITIAL DEPTH TO WATER FROM T.O.C. (0.00FT): 9.3
TOTAL WELL DEPTH FROM T.O.C. (0.00FT) 27.4"
DEPTH OF STANDING WATER: 0.1632 (FT) x GALLONS/FOOT: 25500.1632
2" -0.1632 4"6528 10"-4.0800 THREE WELL VOLUMES 3" -0.3672 6"-1.468 12"-5.8752 BEFORE SAMPLING : 2.95 (GAL)
FREE PRODUCT: YES/NO DEPTH & DESCRIPTION:
SAMPLE: YES / NO
1. BEFORE BAILING: pH 7.32 ELEC. COND. 9/97 TEMP /3.3 C 027.11.
VOLUME TO MIDPOINT(GAL): BAILED (ACTUAL GAL):
DO-3.4
2.MID-POINT: PH 7.45 ELEC. COND. 9/28 TEMP 13.1 C 022.9.2
TOTAL BAILED / PUMPED (ACTUAL GAL): PUMP RATE: GAL/MIN
3. BEFORE SAMPLING: pH 7.09 ELEC COND. 9320 TEMP 13.4 C 027-10
TURBIDITY (DESCRIPTION AT SAMPLING)
WELL BAILED DRY: YES / NO TOTAL BAILED (ACTUAL GAL)
PARAMETERS: VOC BTEX TPH METALS BNA TCLP OTHER:
PARAMETERS: VOC BTEX TPH METALS BNA TCLP OTHER:

DATE: 12-15-16 JOB NO:
CLIENT: Eie knd? ! PROJECT NAME:
PROJECT MGR: Dave Stewart SAMPLER: James Stewart
MONITORING WELL DATA
WELL NO./LOCATION: Q.M·D·9 LOCK #:
DATE CONSTRUCTED: INSTALLED DEPTH (0.00FT): 3.7
SCREENED INTERVAL: ' TO ' ELEVATION T.O.C.(0.00FT)
CASING DIA.(INCH): TOC FROM GROUND SURFACE (0.00FT):
OBSERVED WELL DATA
INITIAL DEPTH TO WATER FROM T.O.C. (0.00FT): $7.7''$
TOTAL WELL DEPTH FROM T.O.C. (0.00FT) 2i.9"
DEPTH OF STANDING WATER: (FT) x GALLONS/FOOT: 22 0.1632
2" -0.1632 4"6528 10"-4.0800 THREE WELL VOLUMES 3" -0.3672 6"-1.468 12"-5.8752 BEFORE SAMPLING : 2, 15 (GAL)
FREE PRODUCT: YES/NO DEPTH & DESCRIPTION:  SAMPLE: YES / NO
1.BEFORE BAILING: PH 6.94 ELEC. COND. 7637 TEMP 13.4 C
VOLUME TO MIDPOINT (GAL): BAILED (ACTUAL GAL):
2 MID DOLLAR
2. MID-POINT: PH 7.06 ELEC. COND. 7727 TEMP 17.6 C 077.25
TOTAL BAILED / PUMPED (ACTUAL GAL): PUMP RATE: GAL/MIN
3. BEFORE SAMPLING: PH 6.90 ELEC COND. 10270 TEMP 13.7 C DO 2.23
TURBIDITY (DESCRIPTION AT SAMPLING)
WELL BAILED DRY: YES / NO TOTAL BAILED (ACTUAL GAL)
PARAMETERS: VOC BTEX TPH METALS BNA TCLP OTHER:
COMMENTS:
SAMPLERS SIGNATURE: DATE:

# GROUNDWATER SAMPLING FORM

DATE: 12.15. ( JOB NO:
CLIENT: Ecie landfil project NAME:
PROJECT MGR: Dave Stewart SAMPLER: Laves Stewart
MONITORING WELL DATA
WELL NO./LOCATION: Q M. D. 14 LOCK #:
DATE CONSTRUCTED: INSTALLED DEPTH (0.00FT):
SCREENED INTERVAL: TO ELEVATION T.O.C.(0.00FT)
CASING DIA.(INCH): TOC FROM GROUND SURFACE (0.00FT):
OBSERVED WELL DATA
INITIAL DEPTH TO WATER FROM T.O.C. (0.00FT): 2 68.2
TOTAL WELL DEPTH FROM T.O.C. (0.00FT) 71.7
DEPTH OF STANDING WATER: 3 (FT) X GALLONS/FOOT: 0.1632
2" -0.1632 4"6528 10"-4.0800 THREE WELL VOLUMES 3" -0.3672 6"-1.468 12"-5.8752 BEFORE SAMPLING : (GAL)
FREE PRODUCT: YES/NO DEPTH & DESCRIPTION:
SAMPLE: YES / NO
1.BEFORE BAILING: pH 7.14 ELEC. COND. 8234 TEMP 10.8 C 27.16
VOLUME TO MIDPOINT(GAL): BAILED (ACTUAL GAL):
2.MID-POINT: PH ELEC. COND. TEMP C
TOTAL BAILED / PUMPED (ACTUAL GAL): PUMP RATE: GAL/MIN
3.BEFORE SAMPLING: PH ELEC COND. TEMP C
TURBIDITY (DESCRIPTION AT SAMPLING)
WELL BAILED DRY: YES / NO TOTAL BAILED (ACTUAL GAL)
PARAMETERS: VOC BTEX TPH METALS BNA TCLP OTHER:
COMMENTS:

# GROUNDWATER SAMPLING FORM

DATE: 12.16.16 JOB NO:
CLIENT: Erie landrell project NAME:
PROJECT MGR: Dave Stewart SAMPLER: Laves Stewart
MONITORING WELL DATA
WELL NO./LOCATION: Q M.W. 16 LOCK #:
DATE CONSTRUCTED: INSTALLED DEPTH (0.00FT):
SCREENED INTERVAL: _ ' TO _ ' ELEVATION T.O.C.(0.00FT)
CASING DIA.(INCH): TOC FROM GROUND SURFACE (0.00FT):
OBSERVED WELL DATA
INITIAL DEPTH TO WATER FROM T.O.C. (0.00FT): 17.2'
TOTAL WELL DEPTH FROM T.O.C., (9.,90FT) 31.8"
DEPTH OF STANDING WATER: 6.1632 (FT) x GALLONS/FOOT: 19.6 0.1632
2" -0.1632 4"6528 10"-4.0800 THREE WELL VOLUMES 3" -0.3672 6"-1.468 12"-5.8752 BEFORE SAMPLING : 2.4 (GAL)
FREE PRODUCT: YES/NO DEPTH & DESCRIPTION:  SAMPLE: YES / NO
1. BEFORE BAILING: pH 6.96 ELEC. COND. 9369 TEMP 13.0 C 022.16
VOLUME TO MIDPOINT(GAL): BAILED (ACTUAL GAL):
2. MID-POINT: PH 7.03 ELEC. COND. 9456 TEMP 12.90 C 027.10.
TOTAL BAILED / PUMPED (ACTUAL GAL): PUMP RATE: GAL/MIN
3.BEFORE SAMPLING: pH 7.09 ELEC COND. 9630 TEMP 12.5 C 02.6.
TURBIDITY (DESCRIPTION AT SAMPLING)
WELL BAILED DRY: YES / NO TOTAL BAILED (ACTUAL GAL)
PARAMETERS: VOC BTEX TPH METALS BNA TCLP OTHER:
COMMENTS:
SAMPLERS SIGNATURE: DATE:

# GROUNDWATER SAMPLING FORM

DATE: 12-16-16		JOB NO:				
CLIENT: Eric C	ind'il	ROJECT NAME:				
PROJECT MGR:	e Stewart	SAMPLER:	James	Stew	art	
		TORING WELL				
WELL NO./LOCATION:	Q.M.W	- 17		LOCK #	:	
DATE CONSTRUCTED:	INST	ALLED DEPTH	(0.00FT):_			
SCREENED INTERVAL:		ELE	VATION T.C	o.c.(0.0	OFT)	
CASING DIA.(INCH):	TOC	FROM GROUND	SURFACE (	(0.00FT)		
		ERVED WELL DA				
INITIAL DEPTH TO WA	ATER FROM T.O.C	(0.00FT):	68.4"			
TOTAL WELL DEPTH FR						
DEPTH OF STANDING W					360	1632
2" -0.1632 4"652 3" -0.3672 6"-1.46	28 <b>10"</b> -4.0800	THREE W	ELL VOLUME	S		
FREE PRODUCT: YES/N	O DEPTH & DESC	RIPTION:				
				SAM	MPLE: YES	/ NO
1.BEFORE BAILING:	рн 7.28	ELEC. COND.	9128	TEMP	10.9	c 027-11.
VOLUME TO MIDPOINT	(GAL):	BAI	LED (ACTUA	L GAL):		
2.MID-POINT:	рн	ELEC. COND.	<u> </u>	TEMP		С
TOTAL BAILED / PUMP		J.,	PUMP		GAI	
TOTAL BATLLED / FOME	ED (ACTUAL GAL	·	FOMF	RAIE.	GAL	7 PIIN
3.BEFORE SAMPLING:	рн	ELEC COND.		TEMP		С
TURBIDITY (DESCRIPT	ION AT SAMPLING	G)				
WELL BAILED DRY: YE	S NO TOTAL I	BAILED (ACTUA	AL GAL)			
PARAMETERS: VOC BTE	X TPH METALS B	NA TCLP OTHE	ER:			
COMMENTS:						
SAMPLERS SIGNATURE:	A. C.		DAT	E:	-15-16	

SEC Form F-01 Groundwater Sampling Form 12-04

# **Appendix B**

Geotechnical Report



December 8, 2016

Stratus Companies 8480 E. Orchard Road, Suite 1100 Greenwood Village, Colorado 80111

Attn: Mr. Richard Dean (rdean@stratuscompanies.com)

Re: Report of Limited Subsurface Exploration

Erie Landfill Closure – Monitoring Well Installation

Erie, Weld County, Colorado EEC Project No. 1162119

Mr. Dean:

Earth Engineering Consultants, LLC (EEC) personnel have completed a limited subsurface exploration including observation of eight (8) bore holes, abandonment of one (1) bore hole, and the installation of seven (7) groundwater monitoring wells / measurement devices in the bore holes for the referenced project. As we understand Stratus Companies (Stratus) is planning on developing the parcel of land for open space which was historically a landfill, situated west of Weld County Road (WCR) 5, north of WCR 4 and south WCR 6 in Erie, Colorado. As part of the landfill closure process, an environmental site assessment (ESA) is being conducted by Stewart Environmental Consultants (SEC) of Fort Collins, Colorado. SEC requested EEC personnel be present during the drilling and installation phase of eight (8) bore holes and seven (7) monitoring wells to log zones of trash, soil, bedrock and water profile conditions as part of their environmental site assessment on behalf of Stratus. The purpose and sampling of the wells is beyond EEC's scope of work and SEC is handling that aspect. This limited evaluation was completed in general accordance with our electronic (e-mail) proposal dated November 21, 2016.

### SITE EXPLORATION AND TESTING PROCEDURES

As part of this limited subsurface exploration, eight (8) soil borings, seven (7) of which were converted to groundwater monitoring wells and one (1) boring was abandoned in place, were completed at the approximate locations as indicated on the site diagram included with this report. The location of each boring and monitoring well was pre-determined by a representative with SEC. The borings were extended to depths ranging from approximately 15-1/2 to 26 feet below existing site grades as directed

by SEC personnel. Upon completion of the drilling operations, which were performed by a licensed water well drilling subcontractor, (Drilling Engineers of Fort Collins, Colorado), one (1) bore hole was abandoned in place, Boring MW-4A, while the remaining bore holes were converted to PVC cased monitoring wells, in general accordance with the water well construction rules from the Division of Water Resources, for future measurements and sampling of groundwater to be conducted by SEC. Results of the field and limited laboratory testing completed by EEC personnel for this assessment are included with this report.

The eight (8) soil boring/monitoring well locations were established in the field by a representative with SEC, then EEC personnel, using a hand held GPS unit, recorded the latitude and longitude coordinates of each boring/monitoring well to assist in preparing the attached *Boring/Monitoring Well Location Diagram* included with this report. The notification and permitting of the seven (7) monitoring wells were provided by SEC personnel. The approximate location for each boring/monitoring well should be considered accurate only to the degree implied by the methods used to make the field measurements.

The soil borings were completed using a truck-mounted, CME 75 drill rig equipped with a hydraulic head employed in drilling and sampling operations. The boreholes were advanced using 4½-inch nominal ID hollow stem augers to maintain open boreholes for sampling and PVC monitoring well/pipe installation. Samples of the subsurface materials encountered were obtained at varying intervals using the split barrel/Standard Penetration Test (SPT) sampling procedures in general accordance with ASTM Specifications D1586.

In the split barrel sampling procedures, standard sampling spoons are driven into the ground by means of a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the split barrel sampler is recorded and is used to estimate the in-situ relative density of cohesionless soils and, to a lesser degree of accuracy, the consistency of cohesive soils. All samples obtained in the field were sealed and returned to our laboratory for further examination, classification and testing.

After completing the drilling and sampling one bore hole was abandoned in place with drill cuttings and a bentonite cap for the top two (2) feet, while for the remaining seven (7) bore hole locations, prior to removal of the hollow stem augers, PVC cased monitoring wells were installed in the open boreholes through the hollow stem augers. The monitoring wells/piezometers were constructed with 2-inch nominal diameter schedule 40 manufactured well screen and riser pipe. In general, the monitoring wells, as requested by SEC personnel, consisted of 10, 15, or 20-foot sections of flush

threaded slotted well screen at the bottom of the boreholes with flush threaded solid riser pipe, as required, to extend the piezometers above ground level. The screened portion of the monitoring wells and generally 2 feet above the screened section, was backfilled with a 10/20 silica sand, and the remaining portion of the well annulus was backfilled with bentonite to the surface. A steel casing with locking top was positioned at the surface of each monitoring well encased with a concrete "donut pad" apron for protection and to divert surficial water flow. Cross-sectional schematics of the monitoring well installation and soil descriptions at each location based on visual and tactual observation are indicated on the attached boring logs.

Limited laboratory testing completed on recovered samples included moisture contents on all retrieved split-spoon samples. Results of the outlined tests are indicated on the attached boring logs and summary sheets.

As a part of the testing program, all samples were examined in the laboratory and classified in general accordance with the attached General Notes and the Unified Soil Classification System, based on the soils' texture and plasticity. The estimated group symbol for Unified Soil Classification System is indicated on the boring logs and a brief description of that classification system is included with this report. Classification of the bedrock was based on visual and tactual evaluation of disturbed samples and auger cuttings. Coring and/or petrographic analysis may reveal other rock types.

## **SUBSURFACE SOIL and GROUNDATER CONDITIONS**

Based on results of the field borings and limited laboratory testing, subsurface conditions can be generalized as follows. Sparse vegetation was observed at the surface of each boring with surficial trash also observed at borings MW-4A and MW-4B. The sparse vegetation at borings MW-1 through MW-3B, MW-5 and MW-6 was underlain by cohesive subsoils visually classified as sandy lean clay. The cohesive soils extended to approximate depths of 3 to 7 feet below present site grades. The sparse vegetation and surficial trash at borings MW-4A and MW-4B was underlain by a mix of sandy lean clay and trash which extended to approximate depths of 3 and 2 feet below present site grades, respectively, and was underlain by visually classified sandy lean clay to approximate depths of 6 and 5 feet, respectively. Underlying the cohesive soils in borings MW-1, MW-2, MW-5, and MW-6 was a mix of sandy lean clay and trash which extended to approximate depths of 7 to 15 feet below existing site grades. Trash was not encountered in borings MW-3A and MW-3B. In general, the trash was identified as magnetic tape, plastic, polyvinyl chloride (pvc) pipe and glass. The underlying trash and/or cohesive materials in the borings extended to the underlying bedrock formation. The

interbedded claystone/siltstone/sandstone bedrock was encountered within each boring at depths ranging from approximately 5 to 15 feet below present site grades and extended to the depths explored, approximately 15 to 26 feet below present site grades. Occasional zones of cemented sandstone/siltstone bedrock were encountered. The interbedded claystone/siltstone/sandstone bedrock was generally weathered/soft to moderately hard at the trash and/or soil bedrock interface becoming more competent/moderately hard with depth.

The stratification boundaries indicated on the boring logs represent the approximate locations of changes in trash, soil and bedrock types; in-situ, the transition of materials may be gradual and indistinct.

Observations were made while drilling the borings on November 28, 29, and 30, 2016 as noted on each of the enclosed Log of Borings, to detect the presence and depth of measureable water levels. As indicated on the enclosed boring/monitoring well logs, water was encountered in borings MW-2 and MW-6 at approximate depths of 5 and 7 feet below existing site grades, respectively, while water was not encountered to maximum depths of exploration in the remaining borings. The water level measurements are indicated in the upper right hand corner of the boring/monitoring well logs. Fluctuations in water levels can occur over time depending on variations in hydrologic conditions and other conditions not apparent at the time of this report. Water level measurements indicated on the boring logs represent the depth of water at the specific time and location of the measurements completed.

Zones of perched and/or trapped water may occur at times in the subsurface trash and/or soils overlying bedrock, on top of the bedrock surface or within permeable fractures in the bedrock materials. The location and amount of perched water is dependent upon several factors, including hydrologic conditions, type of site development, irrigation demands on or adjacent to the site, and seasonal and weather conditions. These observations represent water conditions at the time of the field exploration, and may not be indicative of other times, or at other locations.

### **GENERAL COMMENTS**

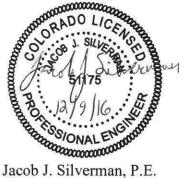
The analysis and information presented in this report is based upon the data obtained from the soil borings performed at the indicated locations as discussed in this report. This report does not reflect any variations which may occur between borings or across the site.

This report has been prepared for the exclusive use of Stratus, and/or assignees for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranty, express or implied, is made.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we can be of further service to you in any other way, please do not hesitate to contact us.

Very truly yours,

Earth Engineering Consultants, LLC



Jacob J. Silverman, P.E. Project Geotechnical Engineer

Reviewed by: David A. Richer, P.E.

Senior Geotechnical Engineer

cc: Stewart Environmental Consultants – Mr. Dave Stewart (<u>Dave.Stewart@stewartenv.com</u>)

## DRILLING AND EXPLORATION

#### **DRILLING & SAMPLING SYMBOLS:**

SS: Split Spoon - 13/8" I.D., 2" O.D., unless otherwise noted PS: Piston Sample ST: Thin-Walled Tube - 2" O.D., unless otherwise noted WS: Wash Sample

R: Ring Barrel Sampler - 2.42" I.D., 3" O.D. unless otherwise noted

PA: Power Auger
FT: Fish Tail Bit
HA: Hand Auger
RB: Rock Bit
DB: Diamond Bit = 4", N, B
BS: Bulk Sample
AS: Auger Sample
HS: Hollow Stem Auger
WB: Wash Bore

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch O.D. split spoon, except where noted.

#### WATER LEVEL MEASUREMENT SYMBOLS:

WL: Water Level WS: While Sampling WCI: Wet Cave in WD: While Drilling

DCI: Dry Cave in

AB: After Boring

BCR: Before Casing Removal

ACR: After Casting Removal

Water levels indicated on the boring logs are the levels measured in the borings at the time indicated. In pervious soils, the indicated levels may reflect the location of ground water. In low permeability soils, the accurate determination of ground water levels is not possible with only short term observations.

#### **DESCRIPTIVE SOIL CLASSIFICATION**

Soil Classification is based on the Unified Soil Classification system and the ASTM Designations D-2488. Coarse Grained Soils have move than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays, if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse grained soils are defined on the basis of their relative inplace density and fine grained soils on the basis of their consistency. Example: Lean clay with sand, trace gravel, stiff (CL); silty sand, trace gravel, medium dense (SM).

#### CONSISTENCY OF FINE-GRAINED SOILS

Unconfined Compressive	
Strength, Qu, psf	Consistency
< 500	Very Soft
500 - 1,000	Soft
1,001 - 2,000	Medium
2,001 - 4,000	Stiff
4,001 - 8,000	Very Stiff
8,001 - 16,000	Very Hard

#### **RELATIVE DENSITY OF COARSE-GRAINED SOILS:**

N-Blows/ft	Relative Density
0-3	Very Loose
4-9	Loose
10-29	Medium Dense
30-49	Dense
50-80	Very Dense
80 +	Extremely Dense

#### PHYSICAL PROPERTIES OF BEDROCK

#### **DEGREE OF WEATHERING:**

Slight Slight decomposition of parent material on

joints. May be color change.

Moderate Some decomposition and color change

throughout.

High Rock highly decomposed, may be extremely

broken.

# HARDNESS AND DEGREE OF CEMENTATION:

#### Limestone and Dolomite:

Hard Difficult to scratch with knife.

Moderately Can be scratched easily with knife.

Hard Cannot be scratched with fingernail.

Soft Can be scratched with fingernail.

### **Shale, Siltstone and Claystone:**

Hard Can be scratched easily with knife, cannot be

scratched with fingernail.

Moderately Can be scratched with fingernail.

Hard

Soft Can be easily dented but not molded with

fingers.

Sandstone and Conglomerate:

Well Capable of scratching a knife blade.

Cemented

Cemented Can be scratched with knife.

Poorly Can be broken apart easily with fingers.

Cemented

## UNIFIED SOIL CLASSIFICATION SYSTEM

						Soil Classification
Cri	teria for Assigning Group	Symbols and Group Na	mes Using Laboratory Tests		Group Symbol	Group Name
Coarse - Grained Soils	Gravels more than 50% of coarse	Clean Gravels Less	Cu≥4 and 1 <cc≤3<sup>E</cc≤3<sup>		GW	Well-graded gravel <sup>F</sup>
more than 50% retained on No. 200	fraction retained on	than 5% fines	Cu<4 and/or 1>Cc>3 <sup>E</sup>		GP	Poorly-graded gravel F
sieve	No. 4 sieve	Gravels with Fines more than 12%	Fines classify as ML or MH		GM	Silty gravel G,H
		fines	Fines Classify as CL or CH		GC	Clayey Gravel <sup>F,G,H</sup>
	Sands 50% or more coarse fraction	Clean Sands Less than 5% fines	Cu≥6 and 1 <cc≤3<sup>E</cc≤3<sup>		SW	Well-graded sand <sup>1</sup>
	passes No. 4 sieve	uidii 5% iiiles	Cu<6 and/or 1>Cc>3 <sup>E</sup>		SP	Poorly-graded sand <sup>1</sup>
		Sands with Fines more than 12%	Fines classify as ML or MH		SM	Silty sand <sup>G,H,I</sup>
		fines	Fines classify as CL or CH		SC	Clayey sand G,H,I
Fine-Grained Soils 50% or more passes	Silts and Clays Liguid Limit less	inorganic	PI>7 and plots on or above "A" Line		CL	Lean clay <sup>K,L,M</sup>
the No. 200 sieve	than 50		PI<4 or plots below "A" Line		ML	Silt K,L,M
		organic	Liquid Limit - oven dried	<0.75	OL	Organic clay K,L,M,N
			Liquid Limit - not dried	<0.75	OL	Organic silt K,L,M,O
	Silts and Clays Liquid Limit 50 or	inorganic	PI plots on or above "A" Line		СН	Fat clay <sup>K,L,M</sup>
	more		PI plots below "A" Line		МН	Elastic Silt K,L,M
		organic	Liquid Limit - oven dried	<0.75	ОН	Organic clay K,L,M,P
			Liquid Limit - not dried	NU./3	UП	Organic silt K,L,M,O
Highly organic soils		Primarily organic ma	atter, dark in color, and organic odor		PT	Peat

<sup>A</sup>Based on the material passing the 3-in. (75-mm) sieve

<sup>B</sup>If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

<sup>C</sup>Gravels with 5 to 12% fines required dual symbols:
GW-GM well graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly-graded gravel with silt
GP-GC poorly-graded gravel with clay
<sup>D</sup>Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt

60

SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

 $^{E}$ Cu=D<sub>60</sub>/D<sub>10</sub> Cc=  $\frac{(D_{30})}{D_{10} \times D_{60}}$ 

<sup>F</sup>If soil contains ≥15% sand, add "with sand" to <sup>G</sup>If fines classify as CL-ML, use dual symbol GC-CM, or SC-SM.

 $^{\rm H}\mbox{If fines}$  are organic, add "with organic fines" to group name

<sup>1</sup>If soil contains >15% gravel, add "with gravel" to group name

<sup>1</sup>If Atterberg limits plots shaded area, soil is a CL-ML, Silty clay

Kif soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.

 $^{L}$ If soil contains  $\geq$  30% plus No. 200 predominantly sand, add "sandy" to group name.

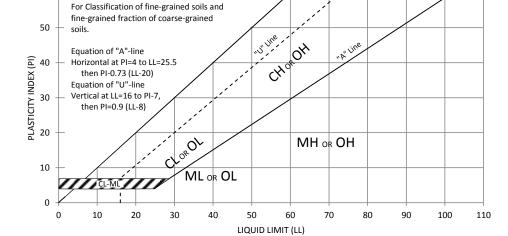
<sup>M</sup>If soil contains ≥30% plus No. 200 predominantly gravel, add "gravelly" to group name.

<sup>N</sup>PI≥4 and plots on or above "A" line.

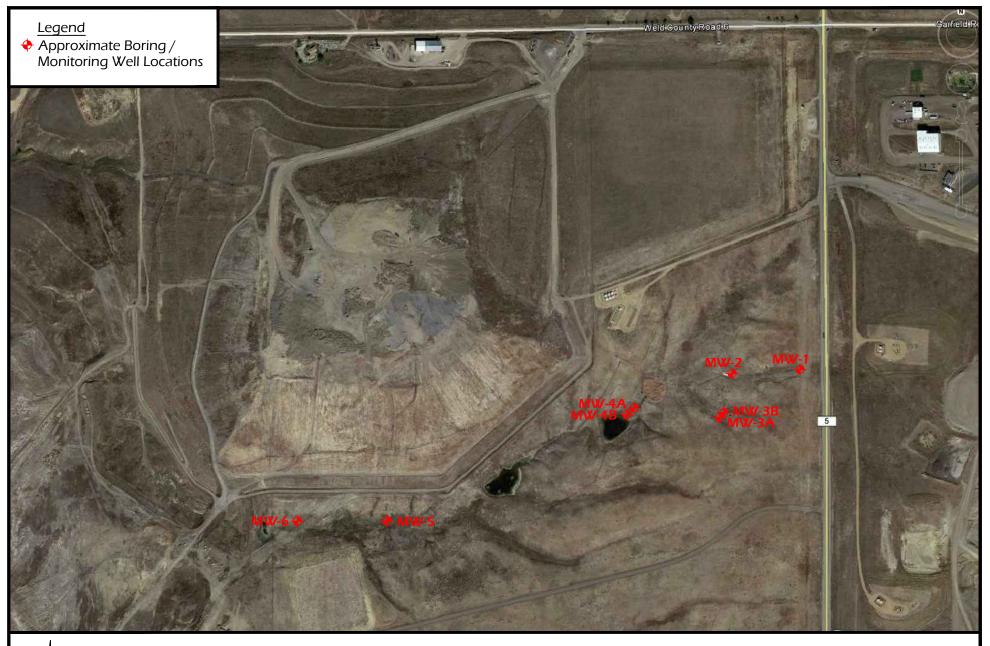
<sup>O</sup>PI≤4 or plots below "A" line.

PPI plots on or above "A" line.

<sup>Q</sup>PI plots below "A" line.







Boring / Monitoring Well Location Diagram
Erie Landfill Closure - Monitoring Well Installation
Erie, Colorado

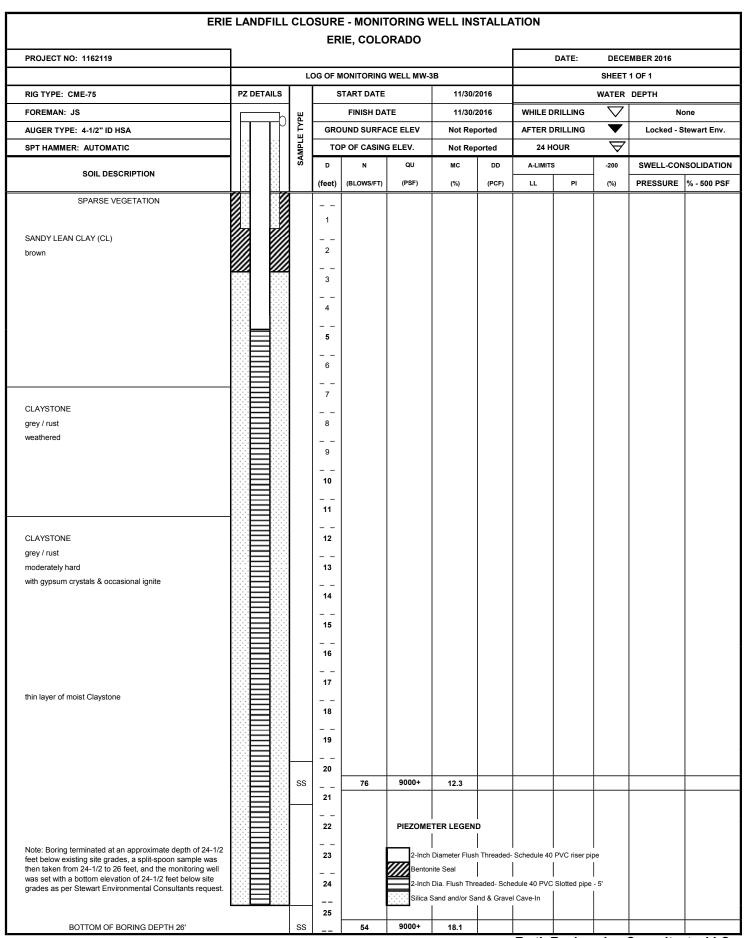
EEC Project #: 1162119 Date: December 2016

North Not to Scale

ERIE	LANDFIL	L CLO	OSURI	E - MONIT	ORING V	WELL INS	STALLA	ATION				
	1			RIE, COLC								
PROJECT NO: 1162119									DATE:	DECE	MBER 2016	
			LOG OF	MONITORING	3 WELL MW-	1				SHEET	1 OF 1	
RIG TYPE: CME-75	PZ DETAILS			START DA	TE	11/28/2	2016			WATER	DEPTH	
FOREMAN: JS		<u> </u>		FINISH DA	TE	11/28/	2016	WHILE D	RILLING	$\overline{}$	No	one
AUGER TYPE: 4-1/2" ID HSA		SAMPLE TYPE	GRO	OUND SURFA	CE ELEV	Not Rep	orted	AFTER D	RILLING	•	Locked - S	tewart Env.
SPT HAMMER: AUTOMATIC		MPL	TC	P OF CASING	G ELEV.	Not Rep	orted	24 H	OUR			
SOIL DESCRIPTION		l s	D (feet)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS	S PI	-200 (%)		% - 500 PSF
SPARSE VEGETATION												
SANDY LEAN CLAY (CL) brown / tan			 2  3									
SANDY LEAN CLAY (CL) with Occasional Trash brown			4									
with occasional trash (magnetic tape)			5  6  7									
SANDSTONE / SILTSTONE brown / rust / grey weathered, moderately hard			9  10									
		ss	11	57	9000+	15.1						
			12  13  14									
		ss	 15	28	9000+	19.9						
weathered claystone lense; soft to moderately hard; with occ	asional lignite											
BOTTOM OF BORING DEPTH 15.5'			16  17  18									
Note: Boring terminated at an approximate depth of 14 feet I site grades, a split-spoon sample was then taken from 14 to the monitoring well was set with a bottom elevation of 14 fee grades as per Stewart Environmental Consultants request.	15-1/2 feet, and		 19  20									
			 21  22									
PIEZOMETER LEGEND			 23									
2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5'			24									
Silica Sand and/or Sand & Gravel Cave-In			25									

ERIE	LANDFI	LL CL	OSUR!	E - MONIT	FORING V	WELL INS	STALLA	NOITA				
	c		EF	RIE, COLC	RADO							
PROJECT NO: 1162119									DATE:		MBER 2016	
			LOG OF	MONITORING	3 WELL MW-	2				SHEET	1 OF 1	
RIG TYPE: CME-75	PZ DETAIL	.s		START DA	TE	11/29/2	2016			WATER	+	
FOREMAN: JS	<b>—</b>	al ₹		FINISH DA	TE	11/29/2	2016	WHILE D	RILLING	$\overline{\nabla}$		5'
AUGER TYPE: 4-1/2" ID HSA		1 5	GRO	OUND SURFA	CE ELEV	Not Rep	orted	AFTER D	RILLING	_	Locked - S	tewart En
SPT HAMMER: AUTOMATIC		SAMPLE TYPE	TC	P OF CASING	G ELEV.	Not Rep	orted	24 H	OUR	$\triangle$		
SOIL DESCRIPTION		8	(feet)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS	PI	-200 (%)	SWELL-COM PRESSURE	_
SPARSE VEGETATION												
SANDY LEAN CLAY (CL) brown			 2  3									
SANDY LEAN CLAY (CL) with Occasional Trash brown with occasional trash (magnetic tape, plastic) dark grey / black sludge at 5'			4 									
SILTSTONE / SANDSTONE brown / rust / grey weathered			10 									
SILTSTONE / SANDSTONE			 15									
brown / rust / grey			۱."									
moderately hard		SS	75	71	6000	13.2						
BOTTOM OF BORING DEPTH 16.0'												
Note: Boring terminated at an approximate depth of 15 feet b site grades, a split-spoon sample was then taken from 15 to monitoring well was set with a bottom elevation of 15 feet bel as per Stewart Environmental Consultants request.	16 feet, and the	he	17 									
PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe			 22  23									
Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5			24									
Silica Sand and/or Sand & Gravel Cave-In			25	l l	l							

ER	IE LANDFI	LL CI				VELL INS	STALLA	ATION				
PROJECT NO: 1162119	٦		Er	RIE, COLO	JKADU				DATE:	DECE	MBER 2016	
TROSECTING. TIGZTIS			LOG OF	MONITORING	WELL MW-3	BΔ			DAIL.	SHEET		
RIG TYPE: CME-75	PZ DETAIL	s	1	START DA		11/28/	2016			WATER		
FOREMAN: JS				FINISH DA		11/28/		WHILE	RILLING			one
AUGER TYPE: 4-1/2" ID HSA	┨├┰	SAMPLE TYPE	GP	OUND SURFA		Not Rep			RILLING	Ť		stewart Env.
SPT HAMMER: AUTOMATIC		.     ;		OP OF CASING		Not Rep			OUR	$\overline{\nabla}$	Locked	newait Liiv.
SFI HAWIMER. AUTOMATIC	<b>- </b>	SAM		N N	QU QU	MC MC	DD	A-LIMITS		-200	SWELL-CON	ISOLIDATIO
SOIL DESCRIPTION			(feet)		(PSF)	(%)	(PCF)	LL	PI	(%)		% - 500 PSI
SPARSE VEGETATION			 1									
SANDY LEAN CLAY (CL) brown / grey / rust brown			 2  3									
ou			4 5 6									
CLAYSTONE rust / grey weathered; moderately hard with gypsum crystals & occasional lignite			7 8 9 10									
		S	3 11	40	7000	19.3						
			12  13  14									
	-	SS	 15	46	7500	19.8						
BOTTOM OF BORING DEPTH 15.5'			 									
			17									
			18									
Note: Boring terminated at an approximate depth of 14 fee			19									
site grades, a split-spoon sample was then taken from 14 t the monitoring well was set with a bottom elevation of 15 fe	eet below site	nd										
grades as per Stewart Environmental Consultants request			20									
			21									
			22									
PIEZOMETER LEGEND												
			23									
2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe												
Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5'			24									
Silica Sand and/or Sand & Gravel Cave-In			25									
1			-						1			



EK	IE LANDFILL	CLC				VELL INS	STALLA	TION						
DDO IFOT NO. 4459440	7		ER	RIE, COLO	DRADO				DATE:	DEGE	MDED 2046			
PROJECT NO: 1162119	_	LOG OF MONITORING WELL MW-4A						DATE: DECEMBER 2016 SHEET 1 OF 1						
RIG TYPE: CME-75	PZ DETAILS		T	START DA		11/29/2	2016			WATER				
FOREMAN: JS	12211112	١		FINISH DA		11/29/2		WHILE D	RILLING			one		
AUGER TYPE: 4-1/2" ID HSA	=	1 H	GRO	UND SURFA		Not Rep		AFTER D		Ť		tewart Env		
SPT HAMMER: AUTOMATIC	=	SAMPLE TYPE	<u> </u>	TOP OF CASING ELEV.		Not Rep		24 H		$\overline{\forall}$	200,000			
STITAMMEN. ACTOMATIC	=	SAM	D	N N	QU	мс	DD	A-LIMITS		-200	SWELL-CON	ISOLIDATIO		
SOIL DESCRIPTION			(feet)	(BLOWS/FT)	(PSF)	(%)	(PCF)	LL	PI	(%)		% - 500 PS		
SPARSE VEGETATION W/ SURFICIAL TRASH														
SANDY LEAN CLAY (CL) with Occasional Trash			1											
prown / red														
with occasional trash (plastic, magnetic tape)			2											
			3											
SANDY LEAN CLAY (CL)			4											
prown														
			5											
			6											
CLAYSTONE			7											
grey / rust														
weathered; moderately hard with occasional lignite & gypsum crystals			8											
mu occasional lighted a gypodin orystalo			9											
		1												
			10											
		l												
		SS	11	37	9000+	19.9								
		<u> </u>	12											
CLAYSTONE			13											
grey / rust														
noderately hard		_	14											
		SS	15	44	9000+	18.7								
			16											
			17											
			18											
			19											
			 20											
		$\vdash$												
		SS	21	40	9000+	19.7								
			22			ANDONMEN	T LEGENI	) 						
	_				~~~	ite Seal								
			23		Drill Cu	aungs 								
SILTSTONE / SANDSTONE					1	1	I	I		I	I	1		
SILTSTONE / SANDSTONE grey / rust			24											

### PROJECT NO. 1992/1995    FOREIAND   FORE	ERII	E LANDFILL	CLC				WELL INS	STALLA	ATION						
NOTIFIE CIME 75	PROJECT NO: 1162119	7		EK	ie, colo	DRADO			DATE: DECEMBER 2016						
Paist Date   Pai			LOG OF MONITORING				WELL MW-4B								
## ADDRETTYPE: 4-19**ID NBA  ## PREMAMER: AUTOMATIC    SPET NAMER: AUTOMATIC	RIG TYPE: CME-75	PZ DETAILS		s	TART DATE		11/29/2	2016			WATER	DEPTH			
Martin   M	FOREMAN: JS				FINISH DA	TE.	11/29/2	2016	WHILE	DRILLING	$\nabla$	N	one		
Martin   M	AUGER TYPE: 4-1/2" ID HSA	1 1 7	₹	GRO	UND SURFA	CE ELEV	Not Rep	orted	AFTER I	DRILLING		Locked - S	Stewart Env.		
Martin   M	SPT HAMMER: AUTOMATIC		] 	то	P OF CASIN	G ELEV.	Not Rep	orted	24 H	IOUR	$\overline{\nabla}$				
SPARSE VEGET ATION W SURFICEM, TRASH SANDY LEAR CLAY (CL) with Decasional Trash Promot Frod with occasional floatin (plastic, wire, magnetic lope)  SILTSTONE F SANDSTONE Brown Frod SILTSTONE F SANDSTONE SILTST	SOIL DESCRIPTION		SAN							1	1		ı		
SRISTONE / SANDSTONE Drown / gray / rust  SRISTONE / SANDSTONE  SRISTONE /	SPARSE VEGETATION W/ SURFICIAL TRASH				(BEOMO/I I)	(, 0, 7	(70)	(1.01)		<u> </u>	(70)	TREGOURE	76 - 300 1 31		
SRISTONE / SANDSTONE Drown / gray / rust  SRISTONE / SANDSTONE  SRISTONE /	SANDY LEAN CLAY (CL) with Occasional Trash														
SANDY LEAN CLAY (C3.)  Drown  SILTSTONE / SANDSTONE  brown / grey / rust  weathered  SILTSTONE / SANDSTONE  brown / grey / rust  9  10  SSS  11  67  88  SILTSTONE / SANDSTONE  brown / grey / rust  10  Note: Being serminated at an approximate deglin of 25 feet below easing site grades, a spit spoon sample was from bland from 25 to 25 feet one will be selected be selected by the selected below easing site grades, a spit spoon sample was from bland from 25 feet below easing site grades, a spit spoon sample was from bland from 25 feet below easing site grades, a spit spoon sample was from bland from 25 feet below easing site grades, a spit spoon sample was from bland from 25 feet below easing site grades, a spit spoon sample was from bland from 25 feet below easing site grades, a spit spoon sample was from bland from 25 feet below easing site grades as per Sievard Environmental Consultants  10  21  22  22  24  PIEZOMETER LEGEND  22  23  24  24  Silks Sand and/or Sand & Grand Care in  Gilles Sand and/or Sand & Grand Care in															
SILTSTONE / SANDSTONE Dirown / grey / rust weathered  SILTSTONE / SANDSTONE Dirown / grey / rust moderately hard to hard  SILTSTONE / SANDSTONE Dirown / grey / rust moderately hard to hard  SILTSTONE / SANDSTONE Dirown / grey / rust moderately hard to hard  SILTSTONE / SANDSTONE Dirown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE / SANDSTONE DIROwn / grey / rust  10  SILTSTONE / SANDSTONE DIrown / grey / rust  10  SILTSTONE /		<i>/////////////////////////////////////</i>		2											
SILTSTONE / SANDSTONE brown / grey / rust weathered  SILTSTONE / SANDSTONE Brown / grey / rust moderately hard to hard  SS 11 67 8500 144.6				3  4 											
SILTSTONE / SANDSTONE brown / grey / rust  moderately hard to hard  SS 11  67 8500 14.6															
SILTSTONE / SANDSTONE brown / grey / rust moderately hard to hard  SS 11  67 8500 144,6				6											
SILTSTONE / SANDSTONE thrown / gray / roat moderately hard to hard  SS 11  67 8500 14.6				1											
SILTSTONE / SANDSTONE brown / grey / rust moderately hard to hard  SS 11 67 8500 14.6 10  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, as per Stewart Environmental Consultants request.  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, as per Stewart Environmental Consultants request.  CLAYSTONE grey / rust  CLAYSTONE grey / rust  SS 11 67 8500 14.6 8500	weathered														
SILTSTONE / SANDSTONE brown / grey / rust moderately hard to hard  SS 11 67 8500 14.6															
brown / grey / rust moderately hard to hard  SS 11 67 8500 14.6															
10	SILTSTONE / SANDSTONE			9											
SS 11 67 8500 14.6															
SS 11 67 8500 14.6	moderately hard to hard			10											
cemented sandstone lenses at 20.5 to 21.5'    CLAYSTONE grey / rust			SS		67	8500	14.6								
cemented sandstone lenses at 20.5 to 21.5'    Total					01	0000	14.0								
cemented sandstone lenses at 20.5 to 21.5'  CLAYSTONE  grey / rust  13				12											
cemented sandstone lenses at 20.5 to 21.5'  CLAYSTONE grey / rust  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 26 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  21 PIEZOMETER LEGEND  22 2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bertonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-in  24 grey / rust															
cemented sandstone lenses at 20.5 to 21.5'  CLAYSTONE grey / rust  In 15  17  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a spill-spoon sample was then taken from 25 to 26 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  2 2 2 2 2 2 2 3 2 3 3				13											
cemented sandstone lenses at 20.5 to 21.5'  CLAYSTONE grey / rust  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 26 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia, Flush Threaded- Schedule 40 PVC riser pipe Sentonite Seal 3															
cemented sandstone lenses at 20.5 to 21.5'    CLAYSTONE grey / rust															
cemented sandstone lenses at 20.5 to 21.5'  CLAYSTONE grey / rust  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 28 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  2				15											
CLAYSTONE grey / rust  Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 26 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  21 22 2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE grey / rust															
Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 26 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  21  PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE grey / rust				16											
Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 25 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  2															
Note: Boring terminated at an approximate depth of 25 feet below existing site grades, a split-spoon sample was then taken from 25 to 26 feet, and the monitoring well was set with a bottom elevation of 25 feet below site grades as per Stewart Environmental Consultants request.  PIEZOMETER LEGEND  21  PIEZOMETER LEGEND  2							l		ļ.						
cemented sandstone lenses at 20.5 to 21.5'  cemented sandstone len						Note: Boring	terminated at	an approx	kimate depth	n of 25 feet b	elow m 25 to				
cemented sandstone lenses at 20.5 to 21.5'  PIEZOMETER LEGEND  21  22  23  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE grey / rust						26 feet, and	the monitoring	well was	set with a bo	ottom elevati	ion of 25				
cemented sandstone lenses at 20.5 to 21.5'  PIEZOMETER LEGEND  21  22  23  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal  2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE grey / rust				19			te grades as p	er Stewar	ı ⊏rıvironme	ınıaı Consult	ans				
cemented sandstone lenses at 20.5 to 21.5'  21  PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE grey / rust															
cemented sandstone lenses at 20.5 to 21.5'  21 PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE grey / rust  21 PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In															
22	cemented sandstone lenses at 20.5 to 21.5'						F	PIEZOMET	ER LEGEN	D					
CLAYSTONE grey / rust  Bentonite Seal 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In															
23 2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In  CLAYSTONE 24 grey / rust				22		<i></i>		Threaded-	Schedule 40	PVC riser pip	ре				
CLAYSTONE 24 Silica Sand and/or Sand & Gravel Cave-In						////		adad C :	adula 40 m :-	Oletted !	<i>E</i> !				
CLAYSTONE grey / rust 24										, Siotted pipe	- 5				
grey / rust	CLAYSTONE					Silica	_ 3 ana/or od	a Grave	0070 111						
moderately hard to hard															
moderatery nature to nature	moderately hard to hard			25											

ERI	LANDFIL	L CL	OSURI	E - MONIT	ORING V	VELL INS	TALLA	ATION				
	1		ER	RIE, COLC	RADO							
PROJECT NO: 1162119									DATE:		MBER 2016	
		_	LOG OF	MONITORING		ı				SHEET		
RIG TYPE: CME-75	PZ DETAILS			START DA		11/28/2				WATER		
FOREMAN: JS				FINISH DA		11/28/2		WHILE		$- \underline{\vee}$		one
AUGER TYPE: 4-1/2" ID HSA		SAMPLE TYPE	-	OUND SURFA		Not Rep			RILLING	_	Locked - S	tewart Env.
SPT HAMMER: AUTOMATIC	l (3)	AMP	то	P OF CASING	S ELEV.	Not Rep	orted	24 H	OUR	riangle		
SOIL DESCRIPTION		S	(feet)	N (BLOWS/FT)	QU (PSF)	MC (%)	DD (PCF)	A-LIMITS	PI	-200 (%)	SWELL-CON PRESSURE	% - 500 PSF
SPARSE VEGETATION												
SANDY LEAN CLAY (CL) brown			1 2 - 3									
SANDY LEAN CLAY with Occasional Trash brown with occasional trash (plastic, pvc)			 4  5									
			6  7  8									
CLAYSTONE			9									
grey / rust weathered			10									
		ss	11 12	27	7500	23.1						
CLAYSTONE			 13									
grey / rust moderately hard			14  15									
CLAYSTONE / SANDSTONE / SILTSTONE		ss	1	54	7500	16.9						
grey / rust, with occasional lignite; moderately hard				<u> </u>								
BOTTOM OF BORING DEPTH 16.5'			17									
Note: Boring terminated at an approximate depth of 15 feet			18									
below existing site grades, a split-spoon sample was then taken from 15 to 16-1/2 feet, and the monitoring well was set with a bottom elevation of 15 feet below site grades as per Stewart Environmental Consultants request.			19  20									
			21									
PIEZOMETER LEGEND			22									
2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal			23									
2-Inch Dia. Flush Threaded- Schedule 40 PVC Slotted pipe - 5' Silica Sand and/or Sand & Gravel Cave-In			24									
_			25									

ERIE	LAND	FILL	CLC	OSUR	E - MONIT	TORING V	WELL INS	TALLA	ATION				
				EF	RIE, COLO	RADO							
PROJECT NO: 1162119										DATE:	DECE	MBER 2016	
			Į.	LOG OF	MONITORING	3 WELL MW-	6				SHEET	1 OF 1	
RIG TYPE: CME-75	PZ DET	AILS			START DA	TE	11/29/2	2016			WATER	DEPTH	
FOREMAN: JS		_h	w w		FINISH DA	TE	11/29/2	2016	WHILE D	RILLING	$\nabla$		r -
AUGER TYPE: 4-1/2" ID HSA		$T^{p}$	SAMPLE TYPE	GRO	OUND SURFA	CE ELEV	Not Rep	orted	AFTER C	RILLING	•	Locked - S	tewart Env.
SPT HAMMER: AUTOMATIC	13		IPLE	тс	P OF CASIN	G ELEV.	Not Rep	orted	24 HOUR		A		
***************************************				D	N	QU	MC	DD	A-LIMITS	3	-200	SWELL-CON	SOLIDATION
SOIL DESCRIPTION				(feet)	(BLOWS/FT)	(PSF)	(%)	(PCF)	ıı	PI	(%)	PRESSURE	% - 500 PSF
SPARSE VEGETATION													
				1									
SANDY LEAN CLAY (CL)	<i>////</i> //												
brown	<i>////</i> ///			2									
f	<i>**</i>	///	1	3									
				4									
		=	1	5									
		₹ .		4 2									
		∃ ::		6									
		∄∷:											
SANDY LEAN CLAY (CL) with Occasional Trash		∃ ∷		7									
dark brown / grey, moist		3											
with occasional trash (pvc, asphaltic shingles, wood)	⊨	∃ ::		8									
	⊨	3											
	₩=			9									
	⊨	∃											
	∷⊨	=		10									
		3											
				11									
		₹ ::											
		∃∷:		12									
		∃	l										
		∄ :		13									
	<b>∷</b> ⊨	∄ ∷	l										
		3		14									
		₹											
		3		15									
CLAYSTONE		3		16									
grey / rust		=	1										
weathered		3		17									
		3											
CLAYSTONE		∃		18									
grey / rust		∄											
moderately hard		=		19									
with occasional lignite		3	_										
Note: Boring terminated at an approximate depth of 19-1/2 feet below site grades, a split-spoon sample was then taken from 19-1/2 to 21 fr	w existing eet, and			20	-								
the monitoring well was set with a bottom elevation of 19-1/2 feet bel grades as per Stewart Environmental	low site		SS		54	8000	24.2						
BOTTOM OF BORING DEPTH 21.0'		- 2		21									
DOLLOW OF BURGING DEPTH 21 U				22									
BOTTOM OF BORING DEPTH 21.0													
PIEZOMETER LEGEND													
PIEZOMETER LEGEND				23									
PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe				23									
PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe Bentonite Seal				23									
PIEZOMETER LEGEND  2-Inch Diameter Flush Threaded- Schedule 40 PVC riser pipe				23									

# **Appendix C**

Water and Soil Environmental Testing Reports

# Batch No: 2454208

# LABORATORY REPORT



Business

**Stratus Companies** 

Attn: Dave Stewart

Laboratory



Stewart Environmental Consultants, LLC 3801 Automation Way, Suite 200 Fort Collins, CO 80525 (970) 226-5500

# Reference Information

Project: S163541022 / 102A-102D

Date of Lab Report: 1/24/17

Re: Stratus Companies

Attn: Dave Stewart

Attached are the results for sample(s) received on 12/15/16.

The analytical results relate only to the samples tested.

"I certify that these analyses and resulting report(s) were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly analyze all samples and accurately reported the results."

"I certify that all analyses were performed at Stewart Environmental Lab are in accordance with methods approved for WASTEWATER under the latest revision to 40 CFR Part 136. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for analyzing the water samples and generating the report(s), the analyses, report, and information submitted is to the best of my knowledge and belief, true, accurate, and complete."

This report contains 52 pages (including the cover page).

If you have any questions concerning this report, please do not hesitate to call (970) 226-5500, e-mail lab.manager@stewartenv.com, or Fax us at (970) 226-4946.

Respectfully Submitted,

**Trevor Mueller** 

Project Manager/Lab Manager

This report shall not be reproduced except in full, without written approval of the laboratory.

# **Laboratory Report**

Client:

**Stratus Companies** 

**Date Sampled:** 

12/15/2016

12:00:00 PM

Date Received:

12/15/2016

Batch No: Laboratory ID: 2454208 S163541022

Matrix:

Grab

Attn: Dave Stewart

Water

Sample Name:

QMW #3

Analysis	Results	Units	MDL	Method	Analysis Date Analys	Sent t Out Laboratory
. SVOC 8270	3470902	Report #	10	EPA 8270	12/29/2016	✓ ACZ Laboratories, Inc.
. VOC 8260 Batch #	0			EPA 8260 B	12/21/2016	
.Acetone	<2	ppm	40	EPA 8260 B	12/21/2016	
.Benzene	< 0.05			EPA 8260 B	12/21/2016	
.Bromobenzene	< 0.1			EPA 8260 B	12/21/2016	
.Bromochloromethane	< 0.1			EPA 8260 B	12/21/2016	
.Bromodichloromethane	< 0.1			EPA 8260 B	12/21/2016	
.Bromoform	< 0.1			EPA 8260 B	12/21/2016	
.Bromomethane	< 0.5			EPA 8260 B	12/21/2016	
.Butanone, 2- (MEK)	< 2			EPA 8260 B	12/21/2016	
.Butylbenzene, n-	< 0.1			EPA 8260 B	12/21/2016	
.Butylbenzene, sec-	< 0.1			EPA 8260 B	12/21/2016	
.Butylbenzene, tert-	< 0.1			EPA 8260 B	12/21/2016	
.Carbon Tetrachloride	< 0.1			EPA 8260 B	12/21/2016	
.Chlorobenzene	< 0.1			EPA 8260 B	12/21/2016	
.Chlorodibromomethane	< 0.1			EPA 8260 B	12/21/2016	
.Chloroethane	< 0.2			EPA 8260 B	12/21/2016	
.Chloroform	< 0.1			EPA 8260 B	12/21/2016	
.Chloromethane	< 0.5			EPA 8260 B	12/21/2016	
.Chlorotoluene, 2-	< 0.1			EPA 8260 B	12/21/2016	
.Chlorotoluene, 4-	< 0.1			EPA 8260 B	12/21/2016	
.Dibromo-3-chloropropane, 1,2-	< 0.2			EPA 8260 B	12/21/2016	
.Dibromoethane, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dibromomethane	< 0.1			EPA 8260 B	12/21/2016	
.Dichlorodifluoromethane	< 0.5			EPA 8260 B	12/21/2016	
.Dichloroethane, 1,1-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloroethane, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloroethylene, 1,1-	0.295	ppm	40	EPA 8260 B	12/21/2016	
.Dichloroethylene, cis-1,2-	0.107	ppm	40	EPA 8260 B	12/21/2016	
.Dichloroethylene, trans-1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropane, 1,2-	< 0.1			EPA 8260 B	12/21/2016	



Stewart Environmental Consultants LLC 3801 Automation Way, Suite 200 ♦ Fort Collins, CO 80525 Phone 970-226-5500 + Fax:970-226-4946

#### Date Sampled: Client: 12/15/2016 12:00:00 PM **Stratus Companies** Date Received: 12/15/2016 Batch No: 2454208 Laboratory ID: S163541022 Matrix: Water Grab Attn: Dave Stewart QMW #3 Sample Name:

.Dichloropropane, 1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropane, 2,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropene, 1,1-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropene, cis-1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropene, trans-1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Ethylbenzene	< 0.1			EPA 8260 B	12/21/2016	
.Fluorotrichloromethane	< 0.1			EPA 8260 B	12/21/2016	
.Hexachlorobutadiene	< 0.1			EPA 8260 B	12/21/2016	
.Isopropylbenzene	< 0.1			EPA 8260 B	12/21/2016	
.Isopropyltoluene, 4-	< 0.1			EPA 8260 B	12/21/2016	
.m-Dichlorobenzene, 1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Methylene Chloride	< 0.1			EPA 8260 B	12/21/2016	
.Naphthalene	< 0.1			EPA 8260 B	12/21/2016	
.o-Dichlorobenzene, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.p-Dichlorobenzene, 1,4-	< 0.1			EPA 8260 B	12/21/2016	
.Propylbenzene, n-	< 0.1			EPA 8260 B	12/21/2016	
.Styrene	< 0.1			EPA 8260 B	12/21/2016	
.Tetrachlorethane, 1,1,1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Tetrachloroethane, 1,1,2,2-	< 0.1			EPA 8260 B	12/21/2016	
.Tetrachloroethylene	< 0.1			EPA 8260 B	12/21/2016	
.Toluene	< 0.1			EPA 8260 B	12/21/2016	
.Trichlorobenzene, 1,2,3-	< 0.1			EPA 8260 B	12/21/2016	
.Trichlorobenzene, 1,2,4-	< 0.1			EPA 8260 B	12/21/2016	
.Trichloroethane, 1,1,1-	< 0.1			EPA 8260 B	12/21/2016	
.Trichloroethane, 1,1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Trichloroethylene	3.59	ppm	40	EPA 8260 B	12/21/2016	
.Trichloropropane, 1,2,3-	< 0.2			EPA 8260 B	12/21/2016	
.Trimethylbenzene, 1,2,4-	< 0.1			EPA 8260 B	12/21/2016	
.Trimethylbenzene, 1,3,5-	< 0.1			EPA 8260 B	12/21/2016	
.Vinyl Chloride	< 0.1			EPA 8260 B	12/21/2016	
.Xylene, m,p-	< 0.1			EPA 8260 B	12/21/2016	
.Xylene, o-	< 0.1			EPA 8260 B	12/21/2016	
_Digest/Total Rec. Batch #	10	Dig#	0	SM 3005 A	12/27/2016	
Antimony	< 0.03	ppm	0.03	EPA 200.7	12/28/2016	
Arsenic	< 0.02	ppm	0.02	EPA 200.7	12/28/2016	
Barium	0.057	ppm	0.002	EPA 200.7	12/28/2016	
Beryllium	0.0056	ppm	0.0005	EPA 200.7	12/28/2016	
Bicarbonate	897	ppm	2	SM 2320 B	1/5/2017	



Client: Date Sampled: 12/15/2016 12:00:00 PM **Stratus Companies** Date Received: 12/15/2016 Batch No: 2454208 Laboratory ID: S163541022 Matrix: Water Grab Attn: Dave Stewart Sample Name: **OMW #3** Cadmium 0.007 0.003 EPA 200.7 12/28/2016 ppm Calcium 521 0.03 EPA 200.7 12/28/2016 ppm Carbonate < 2 2 SM 2320 B 1/5/2017 ppm Chromium 0.083 ppm 0.005 EPA 200.7 12/28/2016 Cobalt 0.068 0.002 EPA 200.7 12/28/2016 ppm . . Copper 0.056 0.005 EPA 200.7 12/28/2016 ppm Lead 0.06 0.02 EPA 200.7 12/28/2016 ppm 270 0.003 EPA 200.7 12/28/2016 Magnesium ppm î 1 Nickel 0.162 0.005 EPA 200.7 12/28/2016 ppm Nitrate + Nitrite as N 181 0.1 EPA 300.0 12/16/2016 ppm Potassium 34.7 0.1 EPA 200.7 12/28/2016 ppm Selenium 0.01 2.18 ppm EPA 200.7 12/28/2016 Silver < 0.005 0.005 EPA 200.7 12/28/2016 ppm Sodium 2490 0.1 EPA 200.7 12/28/2016 ppm Sulfate 5870 ppm 0.5 EPA 300.0 12/16/2016 Thallium < 0.2 Report # 0.002 EPA 200.7 12/28/2016 SM5310B ✓ ACZ Laboratories, Inc. **Total Organic Carbon** 3470902 Report # 1 12/21/2016 Vanadium 0.048 ppm 0.02 EPA 200.7 12/28/2016 All 8260 units are ppm.



Tetrahydrofuran <2 ppm.

Client:

Stratus Companies

Attn: Dave Stewart

Date Sampled:

12/15/2016

11:20:00 AM

Date Received: Batch No: 12/15/2016 2454208

Laboratory ID:

S16354102A

Matrix:

Water

Grab

Sample Name:

ame: QMW -5

Analysis	Results	Units	MDL	Method	Analysis Date Analys	Sent t Out Laboratory
. SVOC 8270	3470903	Report #	10	EPA 8270	12/30/2016	ACZ Laboratories, Inc.
. VOC 8260 Batch #	0			EPA 8260 B	12/27/2016	
.Acetone	< 0.04	ppm	40	EPA 8260 B	12/27/2016	
.Benzene	< 0.001			EPA 8260 B	12/27/2016	
.Bromobenzene	< 0.002			EPA 8260 B	12/27/2016	
.Bromochloromethane	< 0.002			EPA 8260 B	12/27/2016	
.Bromodichloromethane	< 0.002			EPA 8260 B	12/27/2016	
.Bromoform	< 0.002			EPA 8260 B	12/27/2016	
.Bromomethane	< 0.01			EPA 8260 B	12/27/2016	
.Butanone, 2- (MEK)	< 0.04			EPA 8260 B	12/27/2016	
.Butylbenzene, n-	< 0.002			EPA 8260 B	12/27/2016	
.Butylbenzene, sec-	< 0.002			EPA 8260 B	12/27/2016	
.Butylbenzene, tert-	< 0.002			EPA 8260 B	12/27/2016	
.Carbon Tetrachloride	< 0.002			EPA 8260 B	12/27/2016	
.Chlorobenzene	< 0.002			EPA 8260 B	12/27/2016	
.Chlorodibromomethane	< 0.002			EPA 8260 B	12/27/2016	
.Chloroethane	< 0.002			EPA 8260 B	12/27/2016	
.Chloroform	< 0.002			EPA 8260 B	12/27/2016	
.Chloromethane	< 0.01			EPA 8260 B	12/27/2016	
.Chlorotoluene, 2-	< 0.002			EPA 8260 B	12/27/2016	
.Chlorotoluene, 4-	< 0.002			EPA 8260 B	12/27/2016	
.Dibromo-3-chloropropane, 1,2-	< 0.005			EPA 8260 B	12/27/2016	
.Dibromoethane, 1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Dibromomethane	< 0.002			EPA 8260 B	12/27/2016	
.Dichlorodifluoromethane	< 0.01			EPA 8260 B	12/27/2016	
.Dichloroethane, 1,1-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloroethane, 1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloroethylene, 1,1-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloroethylene, cis-1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloroethylene, trans-1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloropropane, 1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloropropane, 1,3-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloropropane, 2,2-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloropropene, 1,1-	< 0.002			EPA 8260 B	12/27/2016	



Client: Date Sampled:
Stratus Companies Date Received:
Batch No:

 Date Received:
 12/15/2016

 Batch No:
 2454208

 Laboratory ID:
 \$16354102A

Matrix:

Water

12/15/2016

Grab

11:20:00 AM

Attn: Dave Stewart

Sample Name: QMW -5

.Dichloropropene, cis-1,3-	< 0.002			EPA 8260 B	12/27/2016	
.Dichloropropene, trans-1,3-	< 0.002			EPA 8260 B	12/27/2016	
.Ethylbenzene	< 0.002			EPA 8260 B	12/27/2016	
.Fluorotrichloromethane	< 0.002			EPA 8260 B	12/27/2016	
.Hexachlorobutadiene	< 0.002			EPA 8260 B	12/27/2016	
.Isopropylbenzene	< 0.002			EPA 8260 B	12/27/2016	
.Isopropyltoluene, 4-	< 0.002			EPA 8260 B	12/27/2016	
.m-Dichlorobenzene, 1,3-	< 0.002			EPA 8260 B	12/27/2016	
.Methylene Chloride	< 0.002			EPA 8260 B	12/27/2016	
.Naphthalene	< 0.002			EPA 8260 B	12/27/2016	
.o-Dichlorobenzene, 1,2-	< 0.002			EPA 8260 B	12/27/2016	
.p-Dichlorobenzene, 1,4-	< 0.002			EPA 8260 B	12/27/2016	
.Propylbenzene, n-	< 0.002			EPA 8260 B	12/27/2016	
Styrene	< 0.002			EPA 8260 B	12/27/2016	
.Tetrachlorethane, 1,1,1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Tetrachloroethane, 1,1,2,2-	< 0.002			EPA 8260 B	12/27/2016	
.Tetrachloroethylene	< 0.002			EPA 8260 B	12/27/2016	
.Toluene	< 0.002			EPA 8260 B	12/27/2016	
.Trichlorobenzene, 1,2,3-	< 0.002			EPA 8260 B	12/27/2016	
.Trichlorobenzene, 1,2,4-	< 0.002			EPA 8260 B	12/27/2016	
.Trichloroethane, 1,1,1-	< 0.002			EPA 8260 B	12/27/2016	
.Trichloroethane, 1,1,2-	< 0.002			EPA 8260 B	12/27/2016	
.Trichloroethylene	< 0.002			EPA 8260 B	12/27/2016	
.Trichloropropane, 1,2,3-	< 0.005			EPA 8260 B	12/27/2016	
.Trimethylbenzene, 1,2,4-	< 0.002			EPA 8260 B	12/27/2016	
.Trimethylbenzene, 1,3,5-	< 0.002			EPA 8260 B	12/27/2016	
.Vinyl Chloride	< 0.002			EPA 8260 B	12/27/2016	
.Xylene, m,p-	< 0.002			EPA 8260 B	12/27/2016	
.Xylene, o-	< 0.002			EPA 8260 B	12/27/2016	
_Digest/Total Rec. Batch #	10	Dig#	0	SM 3005 A	12/27/2016	
Antimony	< 0.03	ppm	0.03	EPA 200.7	12/28/2016	
Arsenic	< 0.02	ppm	0.02	EPA 200.7	12/28/2016	
Barium	0.029	ppm	0.002	EPA 200.7	12/28/2016	
Beryllium	< 0.0005	ppm	0.0005	EPA 200.7	12/28/2016	
Bicarbonate	692	ppm	2	SM 2320 B	1/5/2017	
Cadmium	< 0.003	ppm	0.003	EPA 200.7	12/28/2016	
Calcium	411	ppm	0.03	EPA 200.7	12/28/2016	
Carbonate	<2	ppm	2	SM 2320 B	1/5/2017	



Client: **Date Sampled:** 12/15/2016 11:20:00 AM Date Received: **Stratus Companies** 12/15/2016 Batch No: 2454208 Laboratory ID: S16354102A Matrix: Water Grab Attn: Dave Stewart Sample Name: QMW-5 Chromium < 0.005 0.005 EPA 200.7 12/28/2016 ppm Cobalt 0.005 0.002 EPA 200.7 12/28/2016 ppm Copper < 0.005 0.005 EPA 200.7 12/28/2016 ppm Lead < 0.02 ppm 0.02 EPA 200.7 12/28/2016 Magnesium 229 0.003 EPA 200.7 12/28/2016 ppm Nickel 0.011 0.005 EPA 200.7 12/28/2016 ppm Nitrate + Nitrite as N 25.8 0.1 ppm EPA 300.0 12/16/2016 Potassium 24 0.1 ppm EPA 200.7 12/28/2016 Selenium 0.58 0.01 EPA 200.7 12/28/2016 ppm Silver < 0.005 0.005 **EPA 200.7** 12/28/2016 ppm Sodium 1780 0.1 EPA 200.7 12/28/2016 ppm Sulfate 6040 0.5 EPA 300.0 12/16/2016 ppm Report # 0.002 Thallium 2000 < 0.2 **EPA 200.7** 12/28/2016 **Total Organic Carbon** 3470903 Report # 1 ✓ ACZ Laboratories, Inc. SM5310B 12/21/2016 Vanadium < 0.02 ppm 0.02 EPA 200.7 12/28/2016

All 8260 units are ppm.

Tetrahydrofuran < 0.04 ppm.



Client:

**Stratus Companies** 

Attn: Dave Stewart

Date Sampled:

12/15/2016

1:00:00 PM

**Date Received:** 12/15/2016 Batch No:

2454208

Laboratory ID:

S16354102B

Matrix:

Water

Grab

Sample Name:

QMW -9

Analysis	Results	Units	MDL	Method	Analysis  Date Anal	Sent yst Out Laboratory
. SVOC 8270	3470901	Report #	10	EPA 8270	12/29/2016	✓ ACZ Laboratories, Inc.
. VOC 8260 Batch #	0			EPA 8260 B	12/22/2016	
.Acetone	< 2	ppm	40	EPA 8260 B	12/22/2016	
.Benzene	< 0.05			EPA 8260 B	12/22/2016	
.Bromobenzene	< 0.1			EPA 8260 B	12/22/2016	
.Bromochloromethane	< 0.1			EPA 8260 B	12/22/2016	
.Bromodichloromethane	< 0.1			EPA 8260 B	12/22/2016	
.Bromoform	< 0.1			EPA 8260 B	12/22/2016	
.Bromomethane	< 0.5			EPA 8260 B	12/22/2016	
.Butanone, 2- (MEK)	< 2			EPA 8260 B	12/22/2016	
.Butylbenzene, n-	< 0.1			EPA 8260 B	12/22/2016	
.Butylbenzene, sec-	< 0.1			EPA 8260 B	12/22/2016	
.Butylbenzene, tert-	< 0.1			EPA 8260 B	12/22/2016	
.Carbon Tetrachloride	< 0.1			EPA 8260 B	12/22/2016	
.Chlorobenzene	< 0.1			EPA 8260 B	12/22/2016	
.Chlorodibromomethane	< 0.1			EPA 8260 B	12/22/2016	
.Chloroethane	< 0.2			EPA 8260 B	12/22/2016	
.Chloroform	< 0.1			EPA 8260 B	12/22/2016	
.Chloromethane	< 0.5			EPA 8260 B	12/22/2016	
.Chlorotoluene, 2-	< 0.1			EPA 8260 B	12/22/2016	
.Chlorotoluene, 4-	< 0.1			EPA 8260 B	12/22/2016	
.Dibromo-3-chloropropane, 1,2-	< 0.2			EPA 8260 B	12/22/2016	
.Dibromoethane, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dibromomethane	< 0.1			EPA 8260 B	12/22/2016	
.Dichlorodifluoromethane	< 0.5			EPA 8260 B	12/22/2016	
.Dichloroethane, 1,1-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloroethane, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloroethylene, 1,1-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloroethylene, cis-1,2-	0.208	ppm	40	EPA 8260 B	12/22/2016	
.Dichloroethylene, trans-1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropane, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropane, 1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropane, 2,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropene, 1,1-	< 0.1			EPA 8260 B	12/22/2016	



Client: **Date Sampled:** 12/15/2016 1:00:00 PM **Stratus Companies** Date Received: 12/15/2016 Batch No: 2454208 Laboratory ID: S16354102B Matrix: Water Grab Attn: Dave Stewart Sample Name: QMW-9

.Dichloropropene, cis-1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropene, trans-1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Ethylbenzene	< 0.1			EPA 8260 B	12/22/2016	
.Fluorotrichloromethane	< 0.1			EPA 8260 B	12/22/2016	
.Hexachlorobutadiene	< 0.1			EPA 8260 B	12/22/2016	
.Isopropylbenzene	< 0.1			EPA 8260 B	12/22/2016	
.Isopropyltoluene, 4-	< 0.1			EPA 8260 B	12/22/2016	
.m-Dichlorobenzene, 1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Methylene Chloride	< 0.1			EPA 8260 B	12/22/2016	
.Naphthalene	< 0.1			EPA 8260 B	12/22/2016	
.o-Dichlorobenzene, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.p-Dichlorobenzene, 1,4-	< 0.1			EPA 8260 B	12/22/2016	
.Propylbenzene, n-	< 0.1			EPA 8260 B	12/22/2016	
.Styrene	< 0.1			EPA 8260 B	12/22/2016	
.Tetrachlorethane, 1,1,1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Tetrachloroethane, 1,1,2,2-	< 0.1			EPA 8260 B	12/22/2016	
.Tetrachloroethylene	< 0.1			EPA 8260 B	12/22/2016	
.Toluene	0.147	ppm	40	EPA 8260 B	12/22/2016	
.Trichlorobenzene, 1,2,3-	< 0.1			EPA 8260 B	12/22/2016	
.Trichlorobenzene, 1,2,4-	< 0.1			EPA 8260 B	12/22/2016	
.Trichloroethane, 1,1,1-	< 0.1			EPA 8260 B	12/22/2016	
.Trichloroethane, 1,1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Trichloroethylene	0.177	ppm	40	EPA 8260 B	12/22/2016	
.Trichloropropane, 1,2,3-	< 0.2			EPA 8260 B	12/22/2016	
.Trimethylbenzene, 1,2,4-	< 0.1			EPA 8260 B	12/22/2016	
.Trimethylbenzene, 1,3,5-	< 0.1			EPA 8260 B	12/22/2016	
.Vinyl Chloride	< 0.1			EPA 8260 B	12/22/2016	
.Xylene, m,p-	< 0.1			EPA 8260 B	12/22/2016	
.Xylene, o-	< 0.1			EPA 8260 B	12/22/2016	
_Digest/Total Rec. Batch #	10	Dig#	0	SM 3005 A	12/27/2016	
Antimony	< 0.03	ppm	0.03	EPA 200.7	12/28/2016	
Arsenic	< 0.02	ppm	0.02	EPA 200.7	12/28/2016	
Barium	0.078	ppm	0.002	EPA 200.7	12/28/2016	
Beryllium	0.0008	ppm	0.0005	EPA 200.7	12/28/2016	
Bicarbonate	2690	ppm	2	SM 2320 B	1/5/2017	
Cadmium	< 0.003	ppm	0.003	EPA 200.7	12/28/2016	
Calcium	266	ppm	0.03	EPA 200.7	12/28/2016	
Carbonate	< 2	ppm	2	SM 2320 B	1/5/2017	



Client: Date Sampled: 1:00:00 PM 12/15/2016 **Date Received:** 12/15/2016 **Stratus Companies** Batch No: 2454208 Laboratory ID: S16354102B Matrix: Water Grab Attn: Dave Stewart Sample Name: **QMW-9** Chromium 0.006 0.005 EPA 200.7 12/28/2016 ppm Cobalt 0.034 0.002 EPA 200.7 12/28/2016 ppm Copper < 0.005 0.005 EPA 200.7 12/28/2016 ppm Lead 0.02 0.02 EPA 200.7 12/28/2016 ppm Magnesium 252 0.003 EPA 200.7 12/28/2016 ppm Nickel 0.058 0.005 EPA 200.7 12/28/2016 ppm Nitrate + Nitrite as N 0.165 0.1 EPA 300.0 12/16/2016 ppm Potassium 18.6 0.1 EPA 200.7 12/28/2016 ppm Selenium < 0.02 ppm 0.01 EPA 200.7 12/28/2016 Silver < 0.005 0.005 EPA 200.7 12/28/2016 ppm Sodium 1910 ppm 0.1 EPA 200.7 12/28/2016 Sulfate 4200 0.5 ppm EPA 300.0 12/16/2016 Thallium < 0.2 Report # 0.002 EPA 200.7 12/28/2016 ✓ ACZ Laboratories, Inc. **Total Organic Carbon** 3470901 Report # 1 SM5310B 12/21/2016 Vanadium 0.021 ppm 0.02 EPA 200.7 12/28/2016 

All 8260 units are ppm. Tetrahydrofuran < 2 ppm.



Client:

**Stratus Companies** 

Attn: Dave Stewart

Date Sampled:

12/15/2016

1:45:00 PM

Date Received: Batch No:

12/15/2016 2454208

Laboratory ID:

S16354102C

Matrix:

Water

Grab

Sample Name:

QMW-8

Analysis	Results	Units	MDL	Method	Analysis Sent Date Analyst Out Laborator	ry
. SVOC 8270	3470904	Report #	10	EPA 8270	12/30/2016	, Inc.
. VOC 8260 Batch #	0			EPA 8260 B	12/22/2016	
.Acetone	< 2	ppm	40	EPA 8260 B	12/22/2016	
.Benzene	< 0.05			EPA 8260 B	12/22/2016	
.Bromobenzene	< 0.1			EPA 8260 B	12/22/2016	
.Bromochloromethane	< 0.1			EPA 8260 B	12/22/2016	
.Bromodichloromethane	< 0.1			EPA 8260 B	12/22/2016	
.Bromoform	< 0.1			EPA 8260 B	12/22/2016	
.Bromomethane	< 0.5			EPA 8260 B	12/22/2016	
.Butanone, 2- (MEK)	< 2			EPA 8260 B	12/22/2016	
.Butylbenzene, n-	< 0.1			EPA 8260 B	12/22/2016	
.Butylbenzene, sec-	< 0.1			EPA 8260 B	12/22/2016	
.Butylbenzene, tert-	< 0.1			EPA 8260 B	12/22/2016	
.Carbon Tetrachloride	< 0.1			EPA 8260 B	12/22/2016	
.Chlorobenzene	< 0.1			EPA 8260 B	12/22/2016	
.Chlorodibromomethane	< 0.1			EPA 8260 B	12/22/2016	
.Chloroethane	< 0.2			EPA 8260 B	12/22/2016	
.Chloroform	< 0.1			EPA 8260 B	12/22/2016	
.Chloromethane	< 0.5			EPA 8260 B	12/22/2016	
.Chlorotoluene, 2-	< 0.1			EPA 8260 B	12/22/2016	
.Chlorotoluene, 4-	< 0.1			EPA 8260 B	12/22/2016	
.Dibromo-3-chloropropane, 1,2-	< 0.2			EPA 8260 B	12/22/2016	
.Dibromoethane, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dibromomethane	< 0.1			EPA 8260 B	12/22/2016	
.Dichlorodifluoromethane	< 0.5			EPA 8260 B	12/22/2016	
.Dichloroethane, 1,1-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloroethane, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloroethylene, 1,1-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloroethylene, cis-1,2-	0.835	ppm	40	EPA 8260 B	12/22/2016	
.Dichloroethylene, trans-1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropane, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropane, 1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropane, 2,2-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropene, 1,1-	< 0.1			EPA 8260 B	12/22/2016	



 Client:
 Date Sampled:
 12/15/2016
 1:45:00 PM

 Stratus Companies
 Date Received:
 12/15/2016

 Batch No:
 2454208

Matrix: Water Grab

Laboratory ID:

S16354102C

Attn: Dave Stewart Sample Name: QMW -8

.Dichloropropene, cis-1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Dichloropropene, trans-1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Ethylbenzene	< 0.1			EPA 8260 B	12/22/2016	
.Fluorotrichloromethane	< 0.1			EPA 8260 B	12/22/2016	
.Hexachlorobutadiene	< 0.1			EPA 8260 B	12/22/2016	
.Isopropylbenzene	< 0.1			EPA 8260 B	12/22/2016	
.Isopropyltoluene, 4-	< 0.1			EPA 8260 B	12/22/2016	
.m-Dichlorobenzene, 1,3-	< 0.1			EPA 8260 B	12/22/2016	
.Methylene Chloride	< 0.1			EPA 8260 B	12/22/2016	
.Naphthalene	< 0.1			EPA 8260 B	12/22/2016	
.o-Dichlorobenzene, 1,2-	< 0.1			EPA 8260 B	12/22/2016	
.p-Dichlorobenzene, 1,4-	< 0.1			EPA 8260 B	12/22/2016	
.Propylbenzene, n-	< 0.1			EPA 8260 B	12/22/2016	
.Styrene	< 0.1			EPA 8260 B	12/22/2016	
.Tetrachlorethane, 1,1,1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Tetrachloroethane, 1,1,2,2-	< 0.1			EPA 8260 B	12/22/2016	
.Tetrachloroethylene	< 0.1			EPA 8260 B	12/22/2016	
.Toluene	0.14	ppm	40	EPA 8260 B	12/22/2016	
.Trichlorobenzene, 1,2,3-	< 0.1	••		EPA 8260 B	12/22/2016	
.Trichlorobenzene, 1,2,4-	< 0.1			EPA 8260 B	12/22/2016	
.Trichloroethane, 1,1,1-	< 0.1			EPA 8260 B	12/22/2016	
.Trichloroethane, 1,1,2-	< 0.1			EPA 8260 B	12/22/2016	
.Trichloroethylene	1.23	ppm	40	EPA 8260 B	12/22/2016	
.Trichloropropane, 1,2,3-	< 0.2	0- <b>2</b> -0-200994		EPA 8260 B	12/22/2016	
.Trimethylbenzene, 1,2,4-	< 0.1			EPA 8260 B	12/22/2016	
.Trimethylbenzene, 1,3,5-	< 0.1			EPA 8260 B	12/22/2016	
.Vinyl Chloride	< 0.1			EPA 8260 B	12/22/2016	
.Xylene, m,p-	< 0.1			EPA 8260 B	12/22/2016	
.Xylene, o-	< 0.1			EPA 8260 B	12/22/2016	
Digest/Total Rec. Batch #	10	Dig#	0	SM 3005 A	12/27/2016	
Antimony	< 0.03	ppm	0.03	<b>EPA 200.7</b>	12/28/2016	
Arsenic	< 0.02	ppm	0.02	EPA 200.7	12/28/2016	
Barium	0.051	ppm	0.002	<b>EPA 200.7</b>	12/28/2016	
Beryllium	< 0.0005	ppm	0.0005	<b>EPA 200.7</b>	12/28/2016	
Bicarbonate	915	ppm	2	SM 2320 B	1/5/2017	
Cadmium	< 0.003	ppm	0.003	EPA 200.7	12/28/2016	
Calcium	432	ppm	0.03	EPA 200.7	12/28/2016	
Carbonate	<2	ppm	2	SM 2320 B	1/5/2017	



Client: **Date Sampled:** 12/15/2016 1:45:00 PM Date Received: **Stratus Companies** 12/15/2016 Batch No: 2454208 Laboratory ID: S16354102C Matrix: Water Grab Attn: Dave Stewart Sample Name: **QMW** -8 Chromium 0.007 0.005 EPA 200.7 12/28/2016 ppm Cobalt 0.015 ppm 0.002 EPA 200.7 12/28/2016 Copper 0.027 0.005 EPA 200.7 12/28/2016 ppm Lead < 0.02 0.02 EPA 200.7 12/28/2016 ppm Magnesium 314 ppm 0.003 EPA 200.7 12/28/2016 Nickel 0.03 0.005 ppm EPA 200.7 12/28/2016 Nitrate + Nitrite as N 0.775 0.1 EPA 300.0 12/16/2016 ppm 19 Potassium 0.1 EPA 200.7 12/28/2016 ppm Selenium < 0.02 ppm 0.01 EPA 200.7 12/28/2016 Silver 0.005 < 0.005 EPA 200.7 12/28/2016 ppm Sodium 0.1 12/28/2016 1320 EPA 200.7 ppm Sulfate 5800 ppm 0.5 EPA 300.0 12/16/2016 **Thallium** < 0.2 0.002 EPA 200.7 12/28/2016 Report # ✓ ACZ Laboratories, Inc. Total Organic Carbon 3470904 Report # 1 SM5310B 12/21/2016 Vanadium < 0.02 0.02 **EPA 200.7** 12/28/2016 ppm All 8260 units are ppm.

Tetrahydrofuran < 2 ppm.

Client: Date Sampled: 12/15/2016 2:45:00 PM

 Stratus Companies
 Date Received:
 12/15/2016

 Batch No:
 2454208

 Laboratory ID:
 \$16354102D

Matrix: Water Grab

Attn: Dave Stewart Sample Name: QMW -16

Analysis	Results	Units	MDL	Method	Analysis Date Analy	Sent st Out Laboratory
. SVOC 8270	3470905	Report #	10	EPA 8270	12/30/2016	ACZ Laboratories, Inc.
. VOC 8260 Batch #	0			EPA 8260 B	12/21/2016	
.Acetone	< 2	ppm	40	EPA 8260 B	12/21/2016	
.Benzene	< 0.05	22		EPA 8260 B	12/21/2016	
.Bromobenzene	< 0.1			EPA 8260 B	12/21/2016	
.Bromochloromethane	< 0.1			EPA 8260 B	12/21/2016	
.Bromodichloromethane	< 0.1			EPA 8260 B	12/21/2016	
.Bromoform	< 0.1			EPA 8260 B	12/21/2016	
.Bromomethane	< 0.5			EPA 8260 B	12/21/2016	
.Butanone, 2- (MEK)	<2			EPA 8260 B	12/21/2016	
.Butylbenzene, n-	< 0.1			EPA 8260 B	12/21/2016	
.Butylbenzene, sec-	< 0.1			EPA 8260 B	12/21/2016	
.Butylbenzene, tert-	< 0.1			EPA 8260 B	12/21/2016	
.Carbon Tetrachloride	< 0.1			EPA 8260 B	12/21/2016	
.Chlorobenzene	< 0.1			EPA 8260 B	12/21/2016	
.Chlorodibromomethane	< 0.1			EPA 8260 B	12/21/2016	
.Chloroethane	< 0.2			EPA 8260 B	12/21/2016	
.Chloroform	< 0.1			EPA 8260 B	12/21/2016	
.Chloromethane	< 0.5			EPA 8260 B	12/21/2016	
.Chlorotoluene, 2-	< 0.1			EPA 8260 B	12/21/2016	
.Chlorotoluene, 4-	< 0.1			EPA 8260 B	12/21/2016	
.Dibromo-3-chloropropane, 1,2-	< 0.2			EPA 8260 B	12/21/2016	
.Dibromoethane, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dibromomethane	< 0.1			EPA 8260 B	12/21/2016	
.Dichlorodifluoromethane	< 0.5			EPA 8260 B	12/21/2016	
.Dichloroethane, 1,1-	0.106	ppm	40	EPA 8260 B	12/21/2016	
.Dichloroethane, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloroethylene, 1,1-	0.107	ppm	40	EPA 8260 B	12/21/2016	
.Dichloroethylene, cis-1,2-	3.47	ppm	40	EPA 8260 B	12/21/2016	
.Dichloroethylene, trans-1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropane, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropane, 1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropane, 2,2-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropene, 1,1-	< 0.1			EPA 8260 B	12/21/2016	



# Client: Stratus Companies

**Date Sampled:** 12/15/2016 **Date Received:** 12/15/2016

5/2016 2:45:00 PM

Date Recei
Batch No:

2454208

Laboratory ID:

S16354102D

Grab

Attn: Dave Stewart

Matrix: Water

Sample Name: QMW -16

.Dichloropropene, cis-1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Dichloropropene, trans-1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Ethylbenzene	< 0.1			EPA 8260 B	12/21/2016	
.Fluorotrichloromethane	< 0.1			EPA 8260 B	12/21/2016	
.Hexachlorobutadiene	< 0.1			EPA 8260 B	12/21/2016	
.Isopropylbenzene	< 0.1			EPA 8260 B	12/21/2016	
.Isopropyltoluene, 4-	< 0.1			EPA 8260 B	12/21/2016	
.m-Dichlorobenzene, 1,3-	< 0.1			EPA 8260 B	12/21/2016	
.Methylene Chloride	< 0.1			EPA 8260 B	12/21/2016	
.Naphthalene	< 0.1			EPA 8260 B	12/21/2016	
.o-Dichlorobenzene, 1,2-	< 0.1			EPA 8260 B	12/21/2016	
.p-Dichlorobenzene, 1,4-	< 0.1			EPA 8260 B	12/21/2016	
.Propylbenzene, n-	< 0.1			EPA 8260 B	12/21/2016	
.Styrene	< 0.1			EPA 8260 B	12/21/2016	
.Tetrachlorethane, 1,1,1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Tetrachloroethane, 1,1,2,2-	< 0.1			EPA 8260 B	12/21/2016	
.Tetrachloroethylene	< 0.1			EPA 8260 B	12/21/2016	
.Toluene	< 0.1			EPA 8260 B	12/21/2016	
.Trichlorobenzene, 1,2,3-	< 0.1			EPA 8260 B	12/21/2016	
.Trichlorobenzene, 1,2,4-	< 0.1			EPA 8260 B	12/21/2016	
.Trichloroethane, 1,1,1-	< 0.1			EPA 8260 B	12/21/2016	
.Trichloroethane, 1,1,2-	< 0.1			EPA 8260 B	12/21/2016	
.Trichloroethylene	5.93	ppm	40	EPA 8260 B	12/21/2016	
.Trichloropropane, 1,2,3-	< 0.2			EPA 8260 B	12/21/2016	
.Trimethylbenzene, 1,2,4-	< 0.1			EPA 8260 B	12/21/2016	
.Trimethylbenzene, 1,3,5-	< 0.1			EPA 8260 B	12/21/2016	
.Vinyl Chloride	0.215	ppm	40	EPA 8260 B	12/21/2016	
.Xylene, m,p-	< 0.1			EPA 8260 B	12/21/2016	
.Xylene, o-	< 0.1			EPA 8260 B	12/21/2016	
_Digest/Total Rec. Batch #	10	Dig#	0	SM 3005 A	12/27/2016	
Antimony	< 0.03	ppm	0.03	EPA 200.7	12/28/2016	
Arsenic	< 0.02	ppm	0.02	EPA 200.7	12/28/2016	
Barium	0.045	ppm	0.002	EPA 200.7	12/28/2016	
Beryllium	< 0.0005	ppm	0.0005	EPA 200.7	12/28/2016	
Bicarbonate	1216	ppm	2	SM 2320 B	1/5/2017	
Cadmium	< 0.003	ppm	0.003	EPA 200.7	12/28/2016	
Calcium	355	ppm	0.03	EPA 200.7	12/28/2016	
Carbonate	< 2	ppm	2	SM 2320 B	1/5/2017	



Client: **Date Sampled:** 12/15/2016 2:45:00 PM Date Received: 12/15/2016 **Stratus Companies** Batch No: 2454208 Laboratory ID: S16354102D Matrix: Water Grab Attn: Dave Stewart Sample Name: **QMW-16** Chromium < 0.005 0.005 **EPA 200.7** 12/28/2016 ppm Cobalt 0.048 0.002 **EPA 200.7** 12/28/2016 ppm -Copper 0.028 0.005 EPA 200.7 12/28/2016 ppm Lead < 0.02 0.02 EPA 200.7 12/28/2016 ppm Magnesium 272 0.003 EPA 200.7 12/28/2016 ppm Nickel 0.042 0.005 **EPA 200.7** 12/28/2016 ppm Nitrate + Nitrite as N < 1 0.1 EPA 300.0 12/16/2016 ppm Potassium 17.9 0.1 EPA 200.7 12/28/2016 ppm Selenium < 0.02 0.01 12/28/2016 ppm EPA 200.7 Silver < 0.005 0.005 EPA 200.7 12/28/2016 ppm Sodium 0.1 1480 ppm EPA 200.7 12/28/2016 Sulfate 5570 0.5 **EPA 300.0** 12/16/2016 ppm **Thallium** Report # 0.002 < 0.2 EPA 200.7 12/28/2016 ✓ ACZ Laboratories, Inc. **Total Organic Carbon** 3470905 Report # 1 SM5310B 12/21/2016 П Vanadium < 0.02 ppm 0.02 EPA 200.7 12/28/2016 All 8260 units are ppm. Tetrahydrofuran < 2 ppm. I certify that these analyses and resulting report(s) were

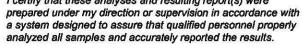
Results Approved by:

Project Manager/Lab Manager

**Date Reported:** 

1-2

1/24/2017





# **Laboratory Quality Control Report**

Anions EPA 300.0						
Date of Analysis	12/16/2016					

Blank						
Analyte	Tested Value (ppm)	QC Acceptance Limit (ppm)				
Bromide	ND	< 0.5				
Chloride	ND	< 0.5				
Fluoride	ND	< 0.1				
Nitrate as N	ND	< 0.1				
Nitrite as N	ND	< 0.1				
Phosphate as P	ND	< 0.5				
Sulfate	ND	< 0.5				

Independent Reference Material - Quality Control Sample								
Analyte	Spike Amount (ppm)	Observed Amt (ppm)	Recovery	Acceptance Limit				
Bromide	1.00	0.86	86%	80% to 120% 80% to 120% 80% to 120% 80% to 120%				
Chloride	2.00	1.70	85%					
Fluoride	1.00	0.92	92%					
Nitrate as N	2.00	1.84	92%					
Nitrite as N	1.00	0.93	93%	80% to 120%				
Phosphate as P	3.00	2.91	97%	80% to 120%				
Sulfate	6.00	5.78	96%	80% to 120%				

Analyte	Ref. Value (ppm)	Recovery	Acceptance Limit			
Bromide	1.00	1.05	105%	80% to 120%		
Chloride	1.00	0.88	88%	80% to 120%		
Fluoride	1.00	0.97	97%	80% to 120%		
Nitrate as N	1.00	0.69	69%	80% to 120%		
Nitrite as N	1.00	0.87	87%	80% to 120%		
Phosphate as P	1.00	0.88	88%	80% to 120%		
Sulfate	1.00	1.03	103%	80% to 120%		

Blank Spike Duplicate							
Analyte	Tested Val	lues (ppm)	Deviation	Acceptance Limit			
Bromide	1.05	0.92	13%	< 20% < 20% < 20%			
Chloride	0.88	0.93	5%				
Fluoride	0.97	0.99	3%				
Nitrate as N	0.69	0.62	11%	< 20%			
Nitrite as N	0.87	0.84	4%	< 20% < 20%			
Phosphate as P	0.88	0.85	3%				
Sulfate	1.03	1.08	5%	< 20%			

	Total Metals EPA 200.7
Analysis Date	12/28/16
Analysis Batch Number(s)	Digest Batch 10

	Digest Blank	
Parameter	Tested Values (ppm)	Acceptance Limit (ppm)
Arsenic	ND	< 0.02
Barium	ND	< 0.001
Cadmium	ND	< 0.003
Calcium	ND	< 0.04
Chromium	ND	< 0.005
Copper	ND	< 0.005
Lead	ND	< 0.02
Manganese	ND	< 0.002
Molybdenum	ND	< 0.02
Nickel	ND	< 0.005
Selenium	ND	< 0.02
Silver	ND	< 0.005
Zinc	ND	< 0.01

Parameter	Tested Values (ppm)	Reference Value (ppm)	Recovery	Acceptance Limi		
Arsenic	0.94	1.00	94%	90% - 110%		
Barium	0.95	1.00	95%	90% - 110%		
Cadmium	0.92	1.00	92%	90% - 110%		
Calcium	0.95	1.00	95%	90% - 110%		
Chromium	0.95	1.00	95%	90% - 110%		
Copper	0.91	1.00	91%	90% - 110%		
Lead	0.95	1.00	95%	90% - 110%		
Manganese	0.95	1.00	95%	90% - 110% 90% - 110%		
Molybdenum	0.96	1.00	96%			
Nickel	0.96	1.00	96%	90% - 110%		
Selenium	0.94	1.00	94%	90% - 110%		
Silver	0.93	1.00	93%	90% - 110%		
Zinc	0.98	1.00	98%	90% - 110%		

ND = Not detected

# **Laboratory Quality Control Report**

	Total Metals EPA 200.7	Page 2 of 2
Analysis Date	12/28/16	
Analysis Batch Number(s)	Digest Batch 10	

		Digest Blank Spike			
Parameter	Spike Amount (ppm)	Recovered Amt. (ppm)	Recovery	Acceptance Limit	
Arsenic	0.40	0.40	100%	80% - 120%	
Barium	0.20	0.20	100%	80% - 120%	
Cadmium	0.20	0.19	95%	80% - 120%	
Calcium	4.0	4.19	105%	80% - 120%	
Chromium	0.20	0.19	95%	80% - 120% 80% - 120% 80% - 120% 80% - 120% 80% - 120%	
Copper	0.20	0.19	95%		
Lead	0.40	0.39	98%		
Manganese	0.20	0.19	95%		
Molybenum	0.40	0.40	100%		
Nickel	0.20	0.19	95%	80% - 120%	
Selenium	0.40	0.35	88%	80% - 120%	
Silver	0.40	0.36	90%	80% - 120%	
Zinc	0.20	0.20	100%	80% - 120%	

		Blank Spike Duplicate			
Parameter	Tested Va	lues (ppm)	Deviation	Acceptance Lim	
Arsenic	0.40	0.40	0%	< 20%	
Barium	0.20	0.20	0%	< 20%	
Cadmium	0.19	0.18	5%	< 20% < 20% < 20% < 20% < 20% < 20% < 20% < 20% < 20% < 20% < 20%	
Calcium	4.19	4.18	0%		
Chromium	0.19	0.19	0%		
Copper	0.19	0.19	0%		
Lead	0.39	0.39	0%		
Manganese	0.19	0.19	0%		
Molybenum	0.40	0.41	2%		
Nickel	0.19	0.19	0%		
Selenium	nium 0.35		0%	< 20%	
Silver	0.36	0.36	0%	< 20%	
Zinc	0.20	0.20	0%	< 20%	

## **CHAIN OF CUSTODY RECORD**

STEWART ENVIRONMENTAL CONSULTANTS, LLC. 2600 Canton Ct, Unit C, Fort Collins, CO 80525

Telephone: (970) 226-5500 Facsimile: (970) 226-4946

PAGE \_\_\_\_ OF

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OLILIA I.	Eric	. 10	sal	· 1/Strat	USC	out	oni	es		Print James C	Stellar	
SAMPI Date	E COLLECT	Grab /	Chlorine (ppm) if	•		1	Vatrox	QC Report Needed	No. of Bottles	Signature. Analyses	Requested	
12:15-16	12:00	G	550/ DC 1500.	Q.M.D. =	123			32	7	Mg, Nay K, Ca, Sb	As, Ba, Beild Cr	
										Corbonate, Di	Ag, TIV, Total	
										Nitrate-Nitrite	8260, 8270	100
12-13-16	11:25	Cy		Q, H.W-6	5				7			
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12:15:16	1300	G		Q.M. W. 9	}				7			
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12.15/16	14:45	CI		O.H.D-10	0				7			
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EN)	12-13-10	Ime O	Received	M.S. M.	Date / Time 12-15-16	REQUE	312D(¢	OMRCERI	ONDATE			
	Date / T	Time	Received	Thy Co	Date / Time			IX TYPE	1 km. *		Was year and the same of the s	
No.				<u> </u>		Lei	My men	nking wate W	TWANGON.	CITY, STATE, ZIP:	·	-
	Date / 1	ime	Received	i by	Date / Time		Nic .	SD	= Solid	INVOICE TO:		
ir	\ M\		Date	12/19/16		Walter Committee of the		ALCOHOL: N	BUUIHED	ADDRESS:		1
	SAMPI Date 12:15:16 12:15:16 12:15:16	Date Time  12-15-16, 12-05  12-15-16, 13-00  12-15-16, 13-45  12-15-16, 14-45  12-15-16, 14-45  Date 1	SAMPLE COLLECTION INF  Date Time Grab / Comp  12:15:16 12:00 Gq  12:15:16 13:00 Gq  12:15:16 13:45 Gq  12:15:16 14:45 Gq  Date / Time  Date / Time  Date / Time	Date Time Grab / Chlorine (ppm) if applicable   12-13-16   12-25   Cq     12-13-16   13-25   Cq	SAMPLE COLLECTION INFO  Date Time Grab / Comp (spm) if sophicalitie  12:15:16 12:00 G	SAMPLE COLLECTION INFO  Date Time Grab/ Comp (ppn) if sociocable  12.15.16 12.00 Cq	SAMPLE COLLECTION INFO  Date Time Grab/ Comp solitothe (pom) # SAMPLE IDENTIFICATION / NAME  12-15-16 12-25	SAMPLE COLLECTION INFO  Date Time Grab / Comp (spen)   SAMPLE IDENTIFICATION / NAME Type  12-15-16 12-25	Date Time Grab / Comp Grab / Comp Grap / C	SAMPLE COLLECTION IN Chlorine (pen) if Comp	CLIENT: Eric Land. Stratus Companies  SAMPLE COLLECTION INFO Date Time Crab Comp (1999) SAMPLE IDENTIFICATION / NAME Type Report No. of	CLIENT: Eric land. Stratus Companies  SAMPLE COLLECTION INFO  Date Time Companies  SAMPLE DENTIFICATION/NAME  Matrix Report No. of Border  Type Report No. of Border  Analyses Regulated



# Sample Receipt Checklist

STEWART ENVIRONMENTAL CONSULTANTS, LLC. 2600 Canton Ct, Unit C, Fort Collins, CO 80525

	To be filled out by laboratory courier, if applicable:	Yes	No	I NA
1	Were samples retrieved by a laboratory courier?			
2	Were samples on ice or in a refrigerated state upon retrieval?	1		
	Courier Initials: 18:00			
	To be filled out by laboratory sample receiving:			
3	Shipping container/cooler intact?			
4	Chain of Custody (COC) present?	V		
5	Sample bottles intact? *			
6	Samples on blue-ice?			╛
7	Samples on wet ice?			╛
8	Samples received within 4 hours of sampling?			
	Temp °C (0.6	Yes	No	NA NA
	Temp C [[G:6]	Yes	No	I NA
10	Sample thawed and free of any ice? *		100	
11	COC complete, legible, signed and dated?			
12	Labels on bottles complete and legible? *			
13	COC in agreement with sample bottle labels? *			
14	Proper container used for analyses requested? *	4.		
15	Samples requiring preservation preserved correctly? *			
16	Sufficient sample volume for analyses requested? *			_
17	Samples within holding times for analyses requested? *			
18	Samples requiring no headspace are free of headspace? *			
	(VOC, TVPH, BTEX, Ethanol, Radon) If no, size of bubble:	< green pe	a,	> green pe
	* If no, document on Chain of Custody.			
		<i>u-</i>		
Note	s:			

January 05, 2017

Report to:

Trevor Mueller

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

cc: Trevor Mueller

Bill to:

Accounts Pavable

Stewart Environmental Consultants, Inc.

2600 Canton Ct.

Unit C

Fort Collins, CO 80525

Project ID:

ACZ Project ID: L34709

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 20, 2016. This project has been assigned to ACZ's project number, L34709. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L34709. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 04, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

re Weller





Case Narrative

Stewart Environmental Consultants, Inc.

January 05, 2017

Project ID:

ACZ Project ID: L34709

### Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 5 ground water samples from Stewart Environmental Consultants, Inc. on December 20, 2016. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L34709. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

### Holding Times

All analyses were performed within EPA recommended holding times.

### Samule Analysis

These samples were analyzed for inorganic, organic parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The following required further explanation not provided by the Extended Qualifier Report:

1. For surrogate 2-Fluorobiphenyl recoveries flagged with an "S10", the surrogate recovery was above laboratory and method acceptance limits. Positive results may have a slightly high bias.



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID:

QMW 9

ACZ Sample ID: L34709-01

Date Sampled: 12/15/16 13:00

Date Received: 12/20/16

Sample Matrix: Ground Water

Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDL	POL	Bato	Amelyst
Carbon, total organic (TOC)	SM5310B	1	124		mg/L	1	5	12/21/16 16:23	spl



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID:

QMW 3

ACZ Sample ID: L34709-02

Date Sampled: 12/15/16 12:00

Date Received: 12/20/16

Sample Matrix: Ground Water

Parameter	EPA Method	Dilution	Result	Qual XQ	Units	Media	POL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	28.6		mg/L	1	5	12/21/16 16:23	spl



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID:

QMW 5

ACZ Sample ID: L34709-03

Date Sampled:

12/15/16 11:00

Date Received: 12/20/16

Sample Matrix: Ground Water

Parameter	EPA Method	Dilution	Result	Qual XQ	Units	MDIL	7/01	Date	Amalyst
Carbon, total organic (TOC)	SM5310B	1	16.7		mg/L	1	5	12/21/16 16:23	



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID:

**QMW 8** 

ACZ Sample ID: L34709-04

Date Sampled: 12/15/16 13:45

Date Received: 12/20/16

Sample Matrix: Ground Water

Frat Gridinian's									
Parameter	EPA Methed	Dilution	Result	Qual XQ	Units	MDL	PGL	Date	Analyst
Carbon, total organic (TOC)	SM5310B	1	18.4		mg/L	1	5	12/21/16 16:23	spi



Stewart Environmental Consultants, Inc.

Project ID:

Sample ID:

**QMW 16** 

ACZ Sample ID: L34709-05

Date Sampled: 12/15/16 14:45

Date Received: 12/20/16

Sample Matrix: Ground Water

Parameter	EPA Method	Dilution	Result	ax lena	Units	MDIL	PAL	Date	Amalysi
Carbon, total organic (TOC)	SM5310B	1	26.5		mg/L	1	5	12/21/16 16:23	spl

oort Header	Explanations
Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5).
	Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample T	ypes		
AS	Analytical Spike (Post Digestion)	LCSWD	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	LFB	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	LFM	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	LFMD	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	LRB	Laboratory Reagent Blank
ICB	Initial Calibration Blank	MS	Matrix Spike
ICV	Initial Calibration Verification standard	MSD	Matrix Spike Duplicate
<b>ICSAB</b>	Inter-element Correction Standard - A plus B solutions	PB\$	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	PBW	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	PQV	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	SDL	Serial Dilution

QС	Sample	Type	Expla	nations

Blanks

Verifies that there is no or minimal contamination in the prep method or calibration procedure.

Control Samples Verifies the accuracy of the method, including the prep procedure.

Duplicates Verifies the precision of the instrument and/or method.

Spikes/Fortified Matrix Determines sample matrix interferences, if any.

Standard Verifies the validity of the calibration.

### ACZ Qualifiers (Qual) 🕷 👉 🧦 🖫

- B Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
- H Analysis exceeded method hold time. pH is a field test with an immediate hold time.
- L Target analyte response was below the laboratory defined negative threshold.
- U The material was analyzed for, but was not detected above the level of the associated value.

The associated value is either the sample quantitation limit or the sample detection limit.

## 

- (1) EPA 600/4-83-920. Matheda for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100, Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

## Comments \* 'E

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis,
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

http://www.acz.com/public/extquallist.pdf

REP001,03.15.02

Stewart Environmental Consultants, Inc.

ACZ Project ID: L34709

Carbon, total o	rganic (T	OC)	SM5310B										
AGZ ID	Type	Analyzed	PONISON	DC.	Samp)∉	f-pund	Umits	Ren	Lower	Upper	RPD	1140000	Qual
WG414603													
WG414603ICV	ICV	12/13/16 14:08	WI160916-3	100		99.1	mg/L	99	90	110			
WG414603ICB	ICB	12/13/16 14:08				U	mg/L		-3	3			
WG415154													
WG415154LFB	LFB	12/21/16 16:23	WI160802-1	50		51.6	mg/L	103	90	110			
L34636-03DUP	DUP	12/21/16 16:23			10.5	10.6	mg/L				1	20	
L34636-04AS	AS	12/21/16 16:23	WI160802-1	500	568	1070	mg/L	100	90	110			

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Inorganic Extended **Qualifier Report** 

Stewart Environmental Consultants, Inc.

ACZ Project ID: L34709

WORKNUM PARAMETER

METHOD

QUAL DESERIFTION

No extended qualifiers associated with this analysis

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID:

**QMW 9** 

ACZ Sample ID: L34709-01

Date Sampled: 12/15/16 13:00

Date Received: 12/20/16

Sample Matrix: Ground Water

Analysis Method: M8270C GC/MS

Extract Method: M3520C

Workgroup: WG415502

Analyst:

itm

Extract Date: 12/20/16 16:54

Analysis Date:

12/29/16 23:15

Compound	CAS	Result	ÖVAL	Silution	XC.	Unite	MIDL	POL
1,2,4-Trichlorobenzene	120-82-1		U	2	*	ug/L	4	20
1,2-Dichlorobenzene	95-50-1		U	2		ug/L	4	20
1,3-Dichlorobenzene	541-73-1		U	2	*	ug/L	4	20
1,4-Dichlorobenzene	106-46-7	4	J	2		ug/L	4	20
1,4-Dioxane	123-91-1	741		2	*	ug/L	4	20
2,4,5-Trichlorophenol	95-95-4		U	2	*	ug/L	20	100
2,4,6-Trichlorophenol	88-06-2		U	2	*	ug/L	4	20
2,4-Dichlorophenol	120-83-2		U	2	*	ug/L	4	20
2,4-Dimethylphenol	105-67-9		U	2	*	ug/L	8	40
2,4-Dinitrophenol	51-28-5		U	2	*	ug/L	40	100
2,4-Dinitrotoluene	121-14-2		U	2	100	ug/L	4	20
2,6-Dinitrotoluene	606-20-8		U	2	*	ug/L	20	100
2-Chloronaphthalene	91-58-7		U	2	*	ug/L	4	20
2-Chlorophenol	95-57-8		U	2	*	ug/L	4	20
2-Methylnaphthalene	91-57-6		U	2	*	ug/L	4	20
2-Methylphenol	95-48-7		U	2	*	ug/L	4	20
2-Nitroaniline	88-74-4		U	2	*	ug/L	20	100
2-Nitrophenol	88-75-5		U	2	*	ug/L	8	40
3- & 4-Methylphenol	1319-77-3		U	2	•	ug/L	8	40
3,3-Dichlorobenzidine	91-94-1		Ü	2	•	ug/L	40	100
3-Nitroaniline	99-09-2		U	2	*	ug/L	20	100
4,6-Dinitro-2-methylphenol	534-52-1		U	2	*	ug/L	20	100
4-Bromophenyl phenyl ether	101-55-3		U	2	•	ug/L	4	20
4-Chloro-3-methylphenol	59-50-7		U	2	*	ug/L	4	20
4-Chloroaniline	106-47-8		U	2	•	ug/L	4	20
4-Chlorophenyl phenyl ether	7005-72-3		U	2	*	ug/L	4	20
4-Nitroaniline	100-01-6		U	2		ug/L	20	100
4-Nitrophenol	100-02-07		U	2		ug/L	20	100
Acenaphthene	83-32-9		U	2	*	ug/L	4	20
Acenaphthylene	208-96-8		U	2	*	ug/L	4	20
Aniline	62-53-3		U	2	*	ug/L	20	100
Anthracene	120-12-7		U	2	*	ug/L	4	20
Azobenzene	103-33-3		U	2	*	ug/L	20	100
Benzidine	92-87-5		U	2	*	ug/L	8	40
Benzo(a)anthracene	56-55-3		U	2	*	ug/L	4	20
Benzo(a)pyrene	50-32-8		U	2	*	ug/L	4	20
Benzo(b)fluoranthene	205-99-2		U	2	*	ug/L	4	20
Benzo(g,h,i)perylene	191-24-2		U	2	*	ug/L	4	20

<sup>\*</sup> Please refer to Qualifier Reports for details.

(800) 334-5493

Stewart Environmental Consultants, Inc.

Project ID:

Sample ID: QMW 9 ACZ Sample ID: L34709-01

Date Sampled: 12/15/16 13:00

Date Received: 12/20/16

campions. Quite				ple Mati		Ground				
				182				02026		
Benzo(k)fluoranthene	207-08-9		U	2	*	ug/L	4	20		
Benzoic Acid	65-85-0		U	2	*	ug/L	40	100		
Benzyl alcohol	100-51-6		U	2	*	ug/L	4	20		
Bis(2-chloroethoxy)methane	111-91-1		U	2	*	ug/L	4	20		
Bis(2-chloroethyl) ether	111-44-4		U	2	*	ug/L	4	20		
Bis(2-chloroisopropyl) ether	108-60-1		U	2	*	ug/L	4	20		
Bis(2-ethylhexyl) phthalate	117-81-7		U	2	*	ug/L	8	40		
Butyl benzyl phthalate	85-68-7		U	2	*	ug/L	4	20		
Chrysene	218-01-9		U	2	*	ug/L	4	20		
Dibenzo(a,h)anthracene	53-70-3		U	2	*	ug/L	4	20		
Dibenzofuran	132-64-9		U	2	*	ug/L	4	20		
Diethylphthalate	84-66-2		U	2	*	ug/L	4	20		
Dimethyl phthalate	131-11-3		U	2	*	ug/L	4	20		
Di-n-butyl phthalate	84-74-2		U	2	*	ug/L	4	20		
Di-n-octyl phthalate	117-84-0		U	2	*	ug/L	4	20		
Fluoranthene	206-44-0		U	2	*	ug/L	4	20		
Fluorene	86-73-7		U	2	•	ug/L	4	20		
Hexachlorobenzene	118-74-1		U	2	*	ug/L	4	20		
Hexachlorobutadiene	87-68-3		U	2		ug/L	4	20		
Hexachlorocyclopentadiene	77-47-4		U	2		ug/L	8	40		
Hexachloroethane	67-72-1		U	2	*	ug/L	4	20		
Indeno(1,2,3-cd)pyrene	193-39-5		U	2	*	ug/L	4	20		
Isophorone	78-59-1		U	2	*	ug/L	4	20		
Naphthalene	91-20-3		U	2	*	ug/L	4	20		
Nitrobenzene	98-95-3		Ü	2	*	ug/L	4	20		
N-Nitrosodimethylamine	62-75-9		Ū	2	*	ug/L	20	100		
N-Nitrosodi-n-propylamine	621-64-7		Ü	2	*	ug/L	4	20		
N-Nitrosodiphenylamine	86-30-6		U	2		ug/L	4	20		
Pentachlorophenol	87-86-5		ΰ	2	*	ug/L	20	100		
Phenanthrene	85-01-8		ŭ	2	*	ug/L	4	20		
Phenol	108-95-2		U	2	*	ug/L	8	40		
Pyrene	129-00-0		Ü	2		ug/L	4	20		
Surrogate Recoveries	<b>0</b> /4/8	". Recovery		Ululian	X(c)		LCL	Mel		
2,4,6-Tribromophenol	118-79-6	119.9		2	*	%	40	125		
2-Fluorobiphenyl	321-60-8	115.8		2	*	%	50	110		
2-Fluorophenol	367-12-4	76.1		2	*	%	54	100		
Nitrobenzene-d5	4165-60-0	107.9		2	*	%	40	110		
Phenol-d6	13127-88-3	78,2		2		%	47	113		
Terphenyl-d14	1718-51-0	51.5		2		%	50	135		